

American Forests *and* Forest Life



March, 1928

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ADEQUATE FOREST FIRE PROTECTION by federal, state, and other agencies, individually and in cooperation; the REFORESTATION OF DENUDED LANDS, chiefly valuable for timber production or the protection of stream-flow; more extensive PLANTING OF TREES by individuals, companies, municipalities, states, and the federal government; the ELIMINATION OF WASTE in the manufacture and consumption of lumber and forest products; the advancement of SOUND REMEDIAL FOREST LEGISLATION.

The ESTABLISHMENT OF NATIONAL AND STATE FORESTS where local and national interests show them to be desirable; the CONSERVATIVE MANAGEMENT OF PUBLIC AND PRIVATE FORESTS so that they may best serve the permanent needs of our citizens; the development of COMMUNITY FORESTS.

FOREST RECREATION as a growing need in the social development of the nation; the PROTECTION OF FISH AND GAME and other forms of wild life, under sound game laws; the ESTABLISHMENT OF FEDERAL AND STATE GAME PRESERVES and public shooting grounds; STATE AND NATIONAL PARKS and monuments where needed, to protect and perpetuate forest areas and objects of outstanding value; the conservation of America's WILD FLORA and FAUNA.

The EDUCATION OF THE PUBLIC, especially school children, in respect to our forests and our forest needs; a more aggressive policy of RESEARCH AND EDUCATIONAL EXTENSION in the science of forest production, management, and utilization, by the nation, individual states, and agricultural colleges; reforms in present methods of FOREST TAXATION, to the end that timber may be fairly taxed and the growing of timber crops increased.

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AMERICAN FORESTS AND FOREST LIFE

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CONTENTS

THE COVER	
"THE GUARDIAN OF THE HEIGHTS"—Photograph by John Kabel	
CRUSADERS	
Poem by LEANDER GOETZ	Frontispiece
PRESIDENT ADAMS' ACORNS	
By JENKS CAMERON	131
LANDSCAPING THE SPANISH TYPE OF HOME	
By MARION BROWNFIELD	135
SEQUOIAH	
By CRISTEL HASTINGS	138
NEW FORESTS FOR NORTHERN NEW YORK	
By SHIRLEY W. ALLEN	141
WHAT DEER EAT	
By JOSEPH DIXON	143
TREES AS MEMORIALS	
By MRS. FRANCIS EDMUND WHITLEY	146
LEAVITT HITS FLOOD PROGRAM	149
THE FOUR THOUSAND DOLLAR DOG	
By WALTER P. TAYLOR	151
FROM FIRE TO SNOWSLIDES	
By CHESTER M. ARCHBOLD	154
CONFERENCE SPURS FORESTRY ONWARD	156
DWARF EVERGREENS IN THE LANDSCAPE	
By ARTHUR H. CARHART	160
EDITORIALS	164
FOREST PEOPLE—BAUER—GROWER OF LILIES IN THE OREGON WOODS	
By ETHEL ROMIG FULLER	166
EUROPEAN TOUR AROUSES INTERNATIONAL INTEREST	168
THROUGH THE FIELD GLASS	
By SHIRLEY W. ALLEN	169
SNAPSHOTS OF EUROPEAN FORESTS—THE BLACK FOREST OF GERMANY	
By JOHN D. GUTHRIE	170
CHIEF FORESTER GREELEY RESIGNS	172
RESOLUTIONS ADOPTED AT ANNUAL MEETING	173
FINANCIAL STATEMENT	173
SAPLING SAM'S SCRAPBOOK	174
AROUND THE STATES	176

AMERICAN FORESTS AND FOREST LIFE invites contributions in the form of popular articles, stories and photographs dealing with trees, forests, reforestation, lumbering, wild life, hunting and fishing, exploration or any of the many other activities which forests and trees typify. Its pages are open to a free discussion of forest questions which in the judgment of the editor will be of value in promoting public knowledge of our forests and their use. Signed articles published in the magazine do not necessarily reflect the views of the Association. Manuscripts must be accompanied by return postage. Editorial and Publication Office, The Lenox Building, 1523 L Street, Washington, D. C.



Photograph by B. L. Brown

"The Conifers Swarm on the Hills in the Sun"

Crusaders

BY LEANDER GOETZ

Have you paused when the trees in the forest are waking
 From beautiful dreams of fair lands far away?
 Have you watched them surveying the distance and making
 Their plans to go out and establish their sway?
 The most ancient crusaders! when never a pinion
 Of bird, nor the track of a beast had been seen,
 When no eye had been formed to enjoy their dominion
 The trees ruled the world with their banners of green.
 And still, every tree knows the lure of migration;
 When the winds tell of lands that are fallow and bare,
 All the tribes in the wood are in keen emulation
 And strive to be foremost to plant themselves there;
 And they shout, "Clear the way! don't you see we are racing
 To mount to the hills that o'ershadow us here?
 We are oaks; see the light-footed hemlocks we're chasing,
 And the pines that are swift as the hawk and the deer."
 Still they shout, "Clear the way! don't you see we are flying
 On down thro' the valley with might and with main?
 We are spruces and pines and with oaks we are vying
 To win for our children the broad, fertile plain."
 When I passed in the spring I rejoiced to discover
 That all who had joined in the races had won—
 Far below are the oaks on the plain they rule over,
 But the conifers swarm on the hills in the sun;
 And my soul would mount like them to heights that are airy
 Forsaking the lowlands where mortals must plod;
 Nevermore would I dwell on the plain, or the prairie,
 But abide on the sun-lighted mountains of God.

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President Adams' Acorns And How They Came to Be Planted at Santa Rosa

By JENKS CAMERON

ONE June day something over a century ago, at that point on the upper Missouri then called the Arikara Villages—today, cartographically speaking, it is just about where that historic stream crosses the line between the Dakotas—two gentlemen had some high words about an unliquidated bar bill. As the controversy developed, their observations touching the veracity, ancestry, and ethnic purity of each other grew at once more pointed and more blunt, until for Monsieur Pierre Dorion mere words became inadequate. Accordingly, M. Dorion, who was somewhat French, but rather more than somewhat Sioux, took what the argot of today would term a "poke" at Señor Manuel Lisa, who was considerably Spanish.

Considering the time, which was 1811, the place, which was a thousand miles beyond the hand of authority, and the combustibility of the human elements involved, which was extreme, it seems incredible that at least one funeral did not flow out of M. Dorion's brusquerie. Such, however, is the fact; there were no casualties. True, there was a smell of murder in the air as Señor Lisa, with a Bowie knife, faced M. Dorion, who was equipped with two pistols of the genus horse. But just when things seemed touch-and-go, a mediator

This is the first of a series of three articles in which Mr. Cameron describes one of the most fascinating incidents in American forestry as well as history. The second article, "An Anchor to Forestward," will appear in the April issue, while "Who Killed Santa Rosa," the concluding article, will appear in May issue of *American Forests* and *Forest Life*.—EDITOR.

stepped betwixt the bravos and, by dint of cajolery and judicious truculence, eventually persuaded them to agree to an armistice. It is never a particularly healthy action, this jumping between angry men with arms in

their hands; and in the year 1811, in the Arikara Villages, it was fully as dangerous as it would be today in a bandit hangout in an Atlantic seaboard city. It is altogether probable that Mr. Henry Marie Brackenridge, aged 25, late of Baltimore, Maryland, barrister without brief, quoter of the classics, dabbler in belles lettres, and enthusiastic—if somewhat dilettantic—observer of natural phenomena, was just about as close to the line between here and hereafter, the day of his essay in Quixotic intervention, as he was at any time in his long life prior to the day he paid the score we all must pay, sixty-six years later. And that is to say something; for Brackenridge's life was by no means a cloistered one. He spent a good part of it on various frontiers; and American frontiers in the first half of the nineteenth century were not movie frontiers.

Brackenridge was a soldier of fortune then, as he was pretty much all his life. That fact, coupled with a desire to learn Spanish against a day when it might come in



JOHN QUINCY ADAMS

Sixth President of the United States and known as the "Tree-planting Mr. Adams"

handy, took him up the Missouri as a sort of supercargo to Manuel Lisa, of the Missouri Fur Company. That he did learn Spanish on that trip, or at least got a grounding therein by reading Don Quixote with his employer, unquestionably had an important bearing on his later career. Another circumstance occurring at the same time probably had.

Preceding Lisa's outfit up the river by about ten days was the historic John Jacob Astor overland expedition to the mouth of the Columbia. At the Arikara Villages it was overtaken

by the later-starting party, and Brackenridge was thus given an opportunity to be much in the company of two English naturalists who were accompany-



ing it; Thomas Nuttall, the botanist and ornithologist, who was afterwards curator of the botanic gardens at Harvard, and John Bradbury, of the Linnæan Society of Liverpool, who was making a collection of American plants. The association with these gentlemen, at this time, of the eager, omnivorous-minded Brackenridge may or may not

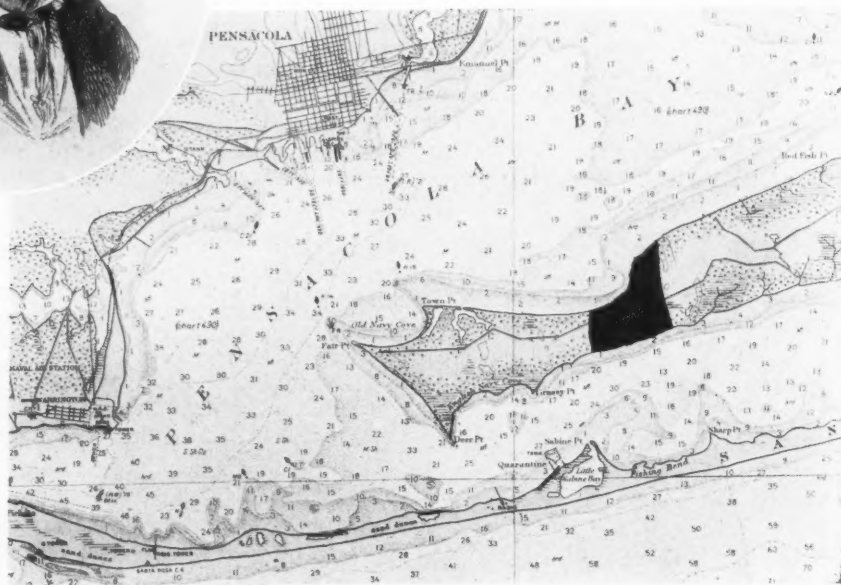
have imparted to that worthy a bit of a slant. But it is a fact worth considering that years later he was rather enthusiastically familiar with Evelyn's *Sylva* and Du Hamel's *Plantations*.

Curious and somewhat awesome is the way Providence lays hold upon materials for the crucible of destiny; taking men here, men there, yet others at the world's end; quickening them with divers influences, that at the appointed time that which has been written may come to pass. There was Brackenridge, acquiring Spanish and picking up crumbs of tree knowledge as it fell from the lips of tree-wise men a

thousand miles beyond the outposts of civilization. There was Joseph M. White, young lawyer of Kentucky, gazing at the horizon, and dreaming of triumphs somewhere behind it. There was Andrew Jackson, the fierce, gaunt man of Tennessee, a bit of a gawk at the thing which some people call the "world," but wise beyond words in men and the ordering thereof. Farming, storekeeping, engaging—according to one biographer—in occasional "acts of violence," he was as unaware, on the 15th of May, 1811, that the *President* and the *Little Belt* were blazing away at each other off the Capes of the Chesapeake, as he was that Lisa's expedition at the selfsame moment was passing Council Bluffs. Nor could he have known, without clairvoyancy, on the 31st of the following July, that Brackenridge, returning down the Missouri with Bradbury, was off the mouth of the Platte just as a gentleman sat down in St. Petersburg to write a letter about the *Little Belt* affair,

and to warn his correspondent that his advice from England, indicated that preparations were making in that country for the avowed purpose of "humbling the Yankees."

Let us take a look at this gentleman who discussed American affairs from the banks of the Neva. He was a spare person who looked like a fox, and who had about him that which suggested the dryness of a salt cod and



None foresaw better than President Adams the relation of the forest to sea-power in America's destiny, and his broad vision resulted in the establishment of the navy yard at Pensacola, in 1826, in the heart of the live oak region, shown on the above map. He also made naval, and forest history in planting, with the acorns of live oak, the region marked with black ink on the map on the peninsula of Santa Rosa jutting out into Pensacola Bay. The oval insert shows that soldier of fortune, Henry Marie Brackenridge, sometime Alcalde of Pensacola and eventually director of this great planting operation ordered by the President

the geniality of an icicle. But be not deceived. No less a person than George Washington said that he was a man. And George Washington knew men. It may very well be that had the immortal one been casting about for a pal for a fishing trip he would have picked out a juicier, hail-fellow sort of a chap; but it may be laid down as a moral certainty that had he been in need of a bit of foreign representation, capable, courageous, and American in the highest sense of the word, he would have at least given careful consideration to able, industrious, God-fearing, canny John Quincy Adams. At any rate, he did. Which is why—indirectly—Mr. Adams

was our representative at the Russian Court in the year 1811—our most excellent representative; as proof against hornswoggery, blandishment, and bluster as the flank of a rhino.

Interesting—all that; and necessary, as the general background to our picture. And yet not the Mr. Adams we must emphasize here. We are interested particularly in the Mr. Adams who wanted to know and had to be shown; the experimenting, observing, reasoning Mr. Adams; the tree-planting Mr. Adams who knew his *Evelyn* and his *Du Hamel*. He knew what sea power meant to a nation, and what the forest in that day meant to sea power; he comprehended full well the problem that oak for sail o' the line perpetually presented in England. A species of knowledge, this last, that sort of came natural to him. For had not his own father, twenty years before the Revolution said—

"If we can remove the turbulent Gallicks our people . . . will, in another century, become more numerous than England itself. Should this be the case, since we have . . . all the naval stores of the nation in our hands, it will be easy to obtain the mastery of the seas. Then the united forces of all Europe will not be able to subdue us?"

That is the Mr. Adams we must concentrate on here; that and the passionately patriotic Mr. Adams who comprehended America's destiny as did few men of his day. He wanted the dignity and honor of

America upheld everywhere on earth, and knew that in this sinful world there were times when sterner implements than embargoes were required therefor.

He knew this well in 1811. He knew it better in 1815 with the glory and the ignominy of the War of 1812 in retrospect. The "humbling of the Yankees" had come to pass—their President sent packing in undignified haste with the capitol ablaze behind him; to say nothing of some thousands in seasoning oak at the navy yard. These and other bitter fruits of years of that narrow and perverse

ineptitude that had preached and practiced a starveling naval policy were abasement a-plenty. Yet there had been exaltation also; an exaltation into a first sensing of nationality from the triumphs of a navy that was perforce representative of the whole rather than of the parts. And that is not to belittle New Orleans, the brilliant victory of a born soldier, a fierce, gaunt man from Tennessee named Andrew Jackson.

And in 1819 Mr. Adams, now become Secretary of State, was at least as aware of the significance of sea power as before, when he negotiated with Spain the treaty under which Florida, where most of the live oaks grew, was ceded to America.



Where Mr. Adams' acorns were planted, as the area looks today. Here, back in 1828, was established the first forest experiment station in America, planted to acorns of the live oak by order of President Adams. His policy was to plant live oak wherever possible to provide for the future timber supply of the Navy of the United States. This operation is believed to be the first national effort in America at reforestation and forest management. The insert is of Andrew Jackson, the hero of New Orleans, Governor of Florida after its acquisition by this country, and whom, during these troublous times, Henry Marie Brackenridge served loyally as secretary, later receiving recognition in higher official posts

And he must have had at least an inkling of the argument that a powerful fleet constitutes, when the Monroe Doctrine was enunciated four years later; for pronouncements of that sort are but windy belchings unless the world knows there is force behind them. And Mr. Adams had much to do with the making of that great American dec-

laration; some say more than its own name-father. Rather curiously, an anonymous pamphlet written some years earlier had something to do with it, too, the unknown author later turning out to be one Henry Marie Brackenridge.

New Orleans put Andrew Jackson's star on the rise, and he was appointed Governor to take over Florida from Spain in 1821. By the time he reached Pensacola he had acquired a secretary—a gentleman he had met en route, who knew Spanish and the Civil Law. This gentleman made himself very useful during the stormy year of the provisional govern-

ment, writing the general's decrees and pronunciamientos, and playing the buffer acceptably. It is also to be suspected that he did a little laughing at the general, considering him a very crude fellow. But he was mighty careful not to do it when the general was looking. And the general was grateful—generously so. He promoted

Brackenridge to the post of Alcalde of Pensacola, and, in the following year, used his influence with President Monroe to have him named district judge of West Florida, a post he was to occupy for ten years.

And so Henry Marie Brackenridge became a leading citizen. He got him a country place on the peninsula between Pensacola Bay and Santa Rosa Sound, where he spent much time puttering with flowers and trees. Politically he attached himself to the star of a transplanted Kentuckian named Joseph M. White who had the look of a rising man and lived up to his looks; speedily acquiring law practice, personal following and political leadership. In 1825, three years after Brackenridge's elevation to the bench, he became territorial delegate to Congress just as John Quincy Adams was becoming President of the United States by virtue of the vote of the House of Representatives.

Mr. Adams, now President Adams, proceeded to make naval—and forest—history. One of the first acts of his administration was the establishment of a navy yard in the live oak region he had cannily acquired from Spain. This was at Pensacola, in 1826. And on January 12 of the following year Delegate White, who had become very chummy with President Adams in Washington and had definitely aligned himself with his party, arose in Congress and moved "to enquire into the expediency of forming plantations for the rearing of live oak for the future supply of that timber for the Navy of the United States."

The President had already issued orders that acorns of the live oaks should be planted wherever possible at the new navy yard.

But with the development of White's parliamentary lead he was soon in a position to pursue this experiment so near to his heart on a scale that made it, so far as the writer is aware,



Photograph by Slim Weis

Mature live oaks, draped with festoons of Spanish moss. Here wonderful verdure makes forever secure Florida's place in the galleries of beauty of the world

the first national effort in America at reforestation and forest management.

Directly across Pensacola Bay from the navy yard lay the peninsula where Brackenridge was fussing with his orange trees. Save for Brackenridge's place and a small tract owned by White, this peninsula was public land.

The President

ordered it withdrawn from entry, and persuaded Congress to give him legislative authorization to cultivate live oak on the tract, which contained about 30,000 acres.

The question of a director for the great experiment now came up. It is hardly necessary to say how it was settled. White had the President's ear. Brackenridge was his henchman. Brackenridge was on the ground and was learned in Evelyn. The upshot of course was that the judge got the job. So it came about that, late in 1828, the first forest experiment station in America was established, and at work planting acorns of the live oak.

The acorns were strictly the idea of President Adams. Brackenridge opposed planting them. So did Secretary Southard of the Navy. But the President overruled them in the following language:

"But the natural history of the live oak has many singularities and has not yet been duly observed. Among my reasons for desiring that a considerable plantation of them should be raised from the acorn is, that their growth to maturity may be observed, and perhaps a better knowledge of them be obtained."

Significant words, those, of the clear-headed wisdom of the man who penned them. But consider also these, written a year earlier regarding his own experiments:

"But last year was my first experience of planting acorns, and that has been partially successful here (i. e., at Braintree, Mass.) and failed at Washington totally. Colonel Perkins told me yesterday that he thought our pasture white oak, well-salted, as good for ship-building as the best live oak. This is encouragement for me to persevere in my experiments which I would leave as at once a charge and inheritance to my children."

Character there—and purest patriotism. George Washington knew men.



A Delightful Treatment of a Small Spanish Type of Bungalow, Which Includes the Use of Italian Cypress and Small Shrubs. The Silhouettes Against the Stucco of the Background of Trees Is Especially Pleasing

Landscaping the Spanish Type of Home

By MARION BROWNFIELD

INDIAN, Mission and Old Spain has each contributed definitely to the charm of the Spanish type of architecture, and today, throughout the Southwest particularly, it has become a popular leader. Many artistic and practical adaptations have been developed in this style of building. The versatile architect even borrows ideas from Italy, as stucco is a favored building material in this Mediterranean country also.

In landscaping the Spanish type of architecture, be it a public building or home, these influences are strongly apparent. They have developed more slowly, but more consistently. The primitive pueblo 'dohes boasted little but an olla filled with the carnations of Ramona's day or the shade of a pepper tree, imported to California from Peru, where the padres also had a chain of missions. But the stucco dwellings built since that time to now have been attractively tree-shaded rather than buried with the hodge-podge of gardening which accompanied certain gropings in American architecture.

The "combination" climate that exists in most of the Southwest has made it possible to use, in landscaping in the Spanish style, many plants of both the temperate and tropical zones. Thus palms and eucalyptus, an Australian import, may be seen growing as friendly neighbors.

Certain trees in California have certain associations. The eucalyptus in considerable variety is the favorite wind-break on ranches and country roads, and is therefore being used in duplicating Spanish "haciendas" for the modern country estate. The willow and the pepper tree were also great favorites on the old ranchos. Drake and Balboa found the live oak dotting both hillsides and valleys, and today these native trees tremendously enhance the value of any building site, as appreciation increases for the sizably grown tree. Some of the most admired landscapings of California boast "the tree of character"—the live oak. The campus of the State University at Berkeley and the picturesque foothill boulevard of southern California, which winds through the towns of Altadena, Sierra Madre, Arcadia and Monrovia, are all charming because so luxuriantly oak-wooded.



A Beautiful Planting Arrangement for the More Formal Type of City Home in the Spanish Style. The Tall Forms of the Cocos Plumosa, or Traveler's Palm, the Cypress and the Deodars, Growing as Friendly Neighbors, Lend Their Dignity to This Mansion

The Monterey cypress or pine (*Cupressus macrocarpa*), which is indigenous to Monterey, but spreads its branches horizontally like the cedars of Lebanon, is another California tree with historic associations. It grew certainly among the rocks of this seacoast town when the Battle of Monterey took place, in 1846, and it is loved alike by the artist who paints its irregular wind-blown form and the tourist who makes a pilgrimage to Robert Louis Stevenson's Monterey home. Doubtless the Monterey cedar is photographed and painted as much as any California tree, though the "Street of Christmas trees," a famous hill-climb in Altadena, lined on both sides with deodars, is almost as popular to photograph.

The typical planting scheme of thirty or forty years ago in California, from San Jose south to San Diego, was considerably more artistic than the gingerbread house it ornamented. It included such trees as pines, eucalypti, magnolias, palms, bananas, oranges, lemons and pepper trees.

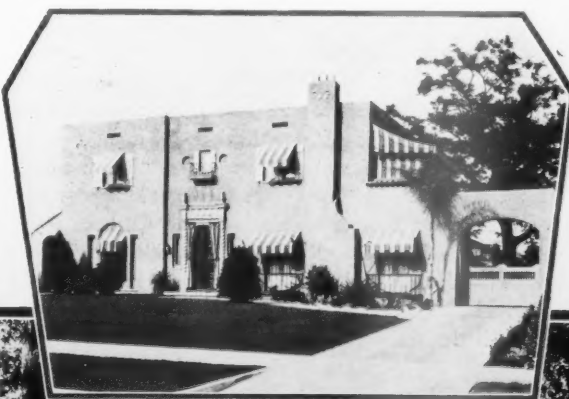
To the tourist nothing was more pleasing than the pepper, with its lacy, evergreen foliage, graceful, generous contour and the red berries that seemed appropriate compensation for the Yuletide of a snowless climate. But the stately eucalyptus, with its shaggy bark, half peeled from the tall, slender trunks, was more of a curiosity. The modern artist revels in their Corot-like aspect bordering a road. In dignity, they are to California what the elm is to New England, and where the landscape archi-

tect has sufficient scope, he uses them for driveways, no matter how informal the Spanish architecture of the home.

The modern Spanish landscaping scheme has, of course, endeavored to take the best from these many planting ideas. Two types of plantings prevail—the simple and the elaborate. Simplicity goes hand in hand with the small or formal city home, or the country or suburban place, where a natural effect is desirable. The elaborate idea in landscaping architecture showing Spanish influence is to plant a generous mixture of tropic and semi-tropical trees and with resulting luxuriance of foliage to add a wealth of color by means of flowering trees, shrubs and other plants. The distinctive nature of each home site is also being considered more carefully now than ever before. A seacoast home at Palos Verdes, for example, is likely to have the historic Monterey cypress in the garden, while the Spanish castle on the heights of Hollywood, Redlands, or San Diego may have the semi-desert surroundings carefully blended into the oasis of the home garden. To make it “bloom like a rose,” the modern landscape architect takes a leaf from “The Alhambra” and the Indian cliff-dweller. Among the live oaks, sycamores and pines, therefore, is often seen the Spanish dagger, or yucca, which grows

(Continued on page 179)

Here the Indian Influence of the Flat Roof Is Carried Out in the Landscaping, for Cactus and other Desert Plants and Shrubs Were



Used to Keep the Planting in Character. The Final Touch of Beauty Is Found in the Great Tree in the Background



The Blending of Native and Imported Shrubs in this Low, Artistic Planting Lends Beautiful Contrast to the Strength and Power of the Native Live Oaks Near this Lovely Home, and Creates a Perfect Harmony in Shadows

Sequoyah

The Story of a Lone Cherokee Chieftain Whose Name Lives On in the Greatest and Most Noble of All Trees—the Sequoia

by Cristel Hastings

Illustrated by A. G. Clayton

DURING the early days of the settlement of America, the Cherokee Indians occupied that part of the country known as the southern Appalachians.

So rich was this wilderness region with fur-bearing animals that the inevitable white man was soon attracted by visions of quick wealth, and many an European fur trader invaded the peaceful boundaries of the Cherokees' domain, where a brisk and profitable trade in skins was quickly established.

Many of these unscrupulous traders were on the ragged fringe of civilization, however, and their shiftlessness led them to "feather their own nests" for the time being by marrying Cherokee women for the mere sake of board and lodging. The end of his trading scheme usually resulted in the sudden disappearance of the trader. More often than not he left behind a destitute and deserted little family, half-Cherokee, half-white.

Toward the end of the French and Indian War, one such

trader married a Cherokee woman, deserted her before the birth of her child, and departed for regions unknown. The Indians named the infant George Gist, evidently the name of the absconding parent. The mother, however, bestowed upon the little one the more euphonious name of Sequoyah.

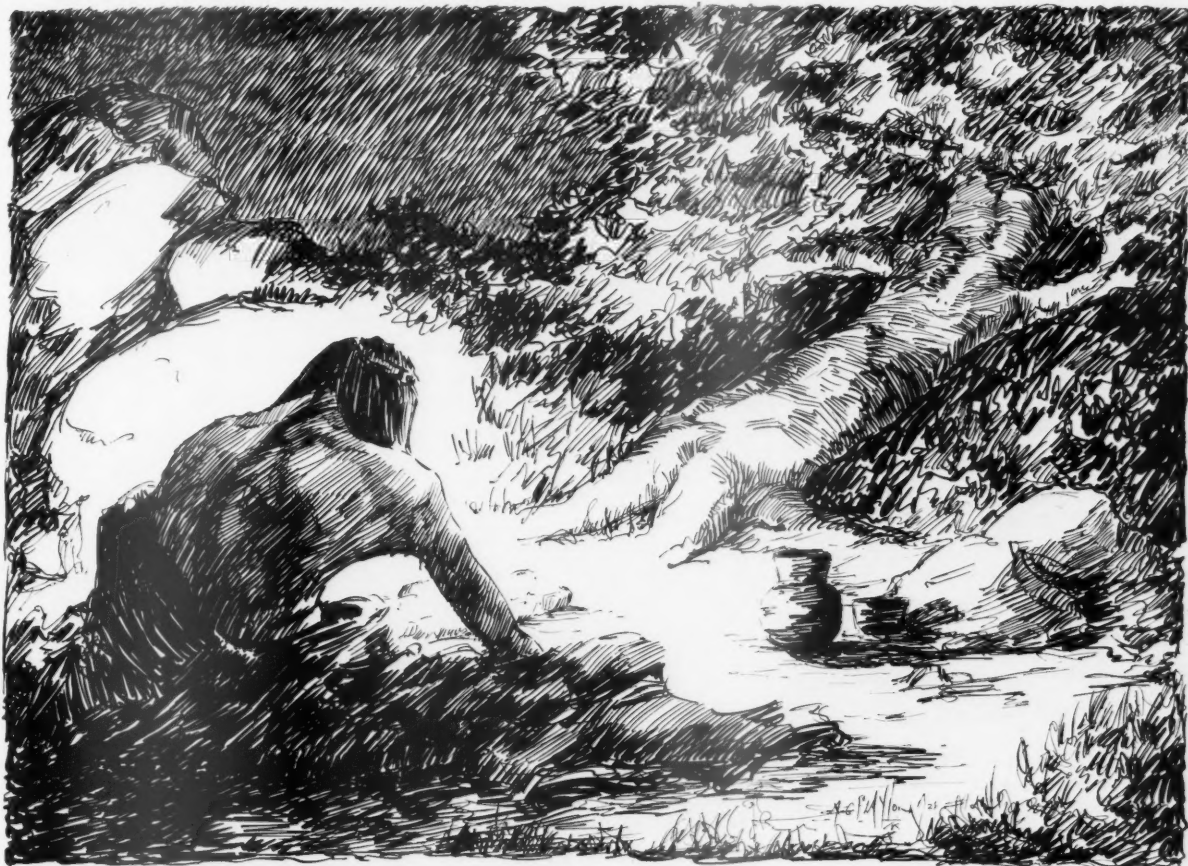
The lad grew into young manhood, his nature an odd mixture of thoughtfulness, of quiet and meditation, and a preference for the companionship of his patiently toiling mother rather than the lively society of the tribal youths.

Following the savage tradition that held woman inferior to man, the Cherokees jered and sneered at Sequoyah's faithful devotion to his mother—a steadfastness that remained his greatest characteristic throughout life.

As the years went on and Sequoyah reached maturity, competition had become almost furious between the English, French and the Spanish for control of the great fur trade of the Cherokee country, and many a fortune in pelts was



With the discovery of gold in their lands, the Cherokees were driven to a hostile country beyond the Mississippi, where they were forced to fight the Osage and Arkansas tribes to hold their new home



At last even strength forsook the great and noble Chieftain, Sequoyah, and one starry night he laid his weary head beside his lonely campfire for the last time

laboriously dragged from the wilderness of the old South-east.

But misfortune stalked the steps of the greedy traders like an evil shadow, bringing great woe to the trusting Indians. The rifle had become the recognized sinew of war as well as of the hunt. Lead and powder were a necessity and the dependence of the Indians on the unscrupulous whites for these commodities was pitiful. The whites were also responsible for the wholesale introduction of the dread "fire water" and the fall and utter ruination of the Red Skin was but a matter of a short time. Sequoyah drank with his brother tribesmen, and became as much a slave to thirst as did they.

Then fate stepped into the circle. One day while hunting, Sequoyah suffered an injury that rendered him a cripple for life. The enforced quiet proved a boon, however, for it saved him from further debauchery and demoralization. Instead there were long periods of meditation, and out of these meditative moods was to be born the greatest intellectual achievement ever attained by a savage mind.

Possessed of a rare mechanical ability, Sequoyah constructed his own crude tools and waxed rich on the ingenious fashioning of silver ornaments, a work in which he became so highly proficient that no North American Indian has ever rivalled his artistry.

People flocked from far and near to look upon his handiwork. So famous did he become that his early life with its sorrowful medley of sneers and jeers from his own people was entirely forgotten. In their eyes the despised son of the deserted Cherokee mother had become a superman, and as such they paid him homage.

In order that his silver oddities might bear the imprint of their originator, yet unable to read or write, Sequoyah prevailed upon a semi-literate half-breed to write his name. From this Sequoyah ingeniously made a die. Even today may be found, here and there among the sadly scattered and deteriorated remnants of the Cherokees bits of Sequoyah's artistry, prized beyond all price.

All this time Sequoyah spent long hours pondering over the falling fortunes of his people. The Cherokees envied the white man his ability to communicate on paper, believing it to be some special dispensation of the Creator and reserved solely for the use and benefit of the pale face.

But Sequoyah continued to ponder long over the mystery, finally concluding that to "talk on paper" was not some high magic and out of reach of his people, but that it was an attribute of mind only. Thereupon his sole passion in life became the solving of the riddle in order to give his brothers a similar code of silent speech.

With the gradual passing of the trader and the steady

encroachment of the settler, the Cherokees were hard put to retain their tribal holdings. Lands were snatched from them and they themselves were ruthlessly driven from the land of their fathers. Appeal to the Federal Government fell on deaf ears and through a series of broken treaties and land robberies, the trusting Cherokees at last came to know the meaning of the white man's treachery in all its viciousness.

Resort to arms would have been folly—the Cherokees recognized their own fallen estate and the futility of war. The philosophy of the Cherokee mind saw only one way in which to combat the cruelties of civilization—by becoming civilized themselves! What a decision! What a solving of an overwhelming problem for a savage mind to foster!

In the mind of Sequoyah the white man's evident "superiority" lay only in his enviable ability to communicate written words. This Sequoyah decided to emulate in order to save his people from their unhappy fate. He was now in his forty-ninth year.

Sequoyah's artistry as a silversmith suddenly ceased, and he devoted long days to carving rude and strange characters in strips of bark. When he was not carving he remained lost in profound thought. The tribe looked upon him as a strange mystery. Once more he became shunned of his people—scoffed and sneered at by those who had worshipped at the shrine of the silversmith. But like a steady light at sea, Sequoyah's mind glowed constantly while he groped in the darkness of illiteracy. At last, after twelve more years of almost heartbreaking labor and discouraging puzzlement, Sequoyah had fashioned the first Cherokee alphabet!

To us of a later day the enormity of this achievement cannot be grasped unless we remember that Sequoyah was but a primitive being, an illiterate savage, without knowledge of language except the words of his own tongue.

Because of the latent peculiarities of the Cherokee dialect, Sequoyah was shrewd enough to surmise that knowledge of the white man's language would be useless, and he proceeded to invent a Cherokee syllabary that is amazing in its completeness even today. But it had one drawback—he had devised a symbol or character for each Cherokee word—a sort of pictograph system of expression. The result was unforeseen but inevitable, and almost overwhelming. At the end of three years he had literally *thousands* of these symbols. Even in the face of this calamitous growth of his alphabet, Sequoyah realized the inability of even a learned mind to grasp and retain these myriads of symbols, and, discarding the patient efforts of years, he began to study the very *foundation* of language—its construction. He searched for the elusive unity of speech, and found it. It was *sound*—the constructive key to all language. He listened and learned. He analyzed and classified. Finally, after much mental persevering, he condensed his finding down to six vowel and seventy-two consonant sounds. But there still remained thirty-seven sounds at large—unclassified things that caused him much trouble and thought. These were of a guttural nature which he represented finally by still another combination. The result was an alphabet that has astonished the learned world ever since. Se-

quoyah had invented a code of language greatly superior in wealth of expression to that of his pale-face brother, and with but eighty-five little alphabetical tools to fashion the mode of expression! And this—the product of one mentality—and a savage, untutored one, at that! It has remained a rarity among achievements—an alphabet of syllables. Ours is but an alphabet of letters.

Sequoyah completed and perfected his work in 1821. Then came a day of lessons and wholesale study! Gray-beards and tots studied zealously to "talk on paper." The Cherokee nation, young and old, became one seething school of learning almost overnight. Sequoyah's name shot into the heavens of fame like a blazing meteor. So easy was the learning that in 1823—but two years later—the entire Cherokee nation was able to converse on paper, and letter-writing had become as common among the tribes as the leaves on the trees. The ease of mastery was self-evident, and the most ignorant savage became able within a few months to communicate with his fellow-man on paper, and with a pleasing ease and volubility.

Then, fully assured of the success of his labors, Sequoyah went abroad among the neighboring tribes. He went among the Arkansas Cherokees who, although they had voluntarily withdrawn from all contact with the hateful and despised civilization of the white man and its attendant woes, seized eagerly upon the opportunity of mastering this new-found power of knowledge, and they, too, studied and learned, and talked on paper. Education among the Cherokees had become a frenzied thing.

It was in the same year—1823—that Sequoyah received from the Cherokee Council public acknowledgement of his amazing work. This was in the form of a silver medal presented through their President, John Ross. Five years later Sequoyah's people elected him as their representative at Washington. The high favor and venerable esteem in which he was held there resulted in the Treaty of Washington of 1828 that he be paid a life pension for his invaluable service to the Cherokee nation. No other *literary* pension has ever been paid by the Government to this day.

On February 28, 1828, the first national newspaper of the Cherokees—*The Cherokee Phoenix*—made its appearance, an achievement that had its inception in the brain of Sequoyah when he puzzled for a medium of expression other than that of voice.

The Cherokees were now on the fair way toward civilization, and prosperity reigned among them. Intemperance was ruled a crime, as was polygamy. Wealth was amassed by many of the tribe, and they were justly proud of their herds and their holdings. They even exported wheat and tobacco down the Tennessee to New Orleans, as well as cottons and woollens.

And then, in the height of their affluence, came a staggering blow. Gold was discovered in their lands. This was in 1829. Again the white man revelled in deeds of violence and treachery. Treaties were violated; Cherokee lands, rich in gold and cultivation, were seized, and after almost ten years of hopeless struggle against the inevitable, dis-

(Continued on page 183)

New Forests for Northern New York

By SHIRLEY W. ALLEN

"WE want more people living in this part of the country," said John N. Carlisle, President of the Northern New York Utilities Company, as I sat talking to him last fall in his office in Watertown. "If this is to come about," he continued, "there must be some way for them to earn a living and the country must be attractive. That, in short, is the reason for our company's reforestation goal of 10,000,000 trees planted by 1930, and that is why we are urging county and municipal forests as well as reforesting abandoned farm lands acquired in connection with our rights of way. From a strictly selfish standpoint, a big population and more industries, means that we can sell more current, and that is our business. On the other hand, we won't have much current to sell unless we take care of our water resources — protect our watersheds from erosion, keep the springs from drying up, regulate stream flow, and store water in the soil. Plenty of for-

ests are our best bet for these purposes." I had heard of the activities of this company and was interested, because, up to 1918, I had been somewhat familiar with the country which it serves. Even at that time there were a number of flourishing forest industries, which today represent only idle plants and disappearing communities. It is that part of New York north of the Barge Canal (old Erie Canal) and east of Lake Ontario, a country which, outside the Adirondack Mountains, has been largely given over to farming, gradually worn out, and much of it abandoned. Scrub hardwood growth or indifferent pasture land stretches over the low hills between the larger, prosperous towns and the small, strug-

gling ones. Of the present standing timber of the entire state of New York, only about thirty-eight per cent is fit for anything other than fuel or chemical wood. This amounts to less than 10 billion feet and must be reduced by the 2½ billion contained in the state-owned Adirondack lands, where no timber may be utilized. In fact, the State Forest Preserve, because of the constitutional provision against cutting, represents a museum, rather than a forest, a delightful one to be sure, covering an area of 1,884,643 acres.

"When did this work of yours start anyway?" I asked Mr.

Carlisle, for I did not remember any great activity previous to 1918.

"Far-sighted men like C. C. Burns and J. B. Taylor first got the thing to going," he replied, "and previous to 1914 the company had planted 100,000 trees, or a total of about 100 acres. From that time up through 1923 all plantings totaled 647,100 trees. Then the Carlisle interest purchased the company and

encouraged by early reforestation, expanded the work. In the next four years we put out more than 3,000,000 trees, making a total of 4,000,000 and covering about 4,000 acres. The present year has brought the total up to 7,000,000, which means about 7,000 acres coming on.

"What about survival of your plantings and where can I see some of them?"

To this Mr. Carlisle explained: "We try to make each tract sort of pay its way. If there is a scrubby stand of hardwood, with scattered larger trees, we turn loose our forester with a small portable sawmill and by working up the fuel wood and posts, often secure sufficient revenue to



A good way to use abandoned farm land in Northern New York. These are ten-year-old Scotch pines spaced six by six feet and bidding fair to yield sawlogs within the next thirty-five years. Scotch pine is usually planted only on the poorest soil

finance the planting. Incidentally, the partial clearing of the patch makes it easier to get around with a planting crew. Eventually a mill at Oswego will consume all wood for which we find no local market, in the manufacture of paper board."

I could follow Mr. Carlisle all right except when I thought of the low hills which seemed to have nothing but poor grass growth, so I said, "How do you work it on these old farm lands with no wood on them?"

"You can usually get one poor crop of oats off," he declared, "and that will help pay the cost."

I wanted to get a look at this country and the opportunity came when I called on George S. Lawyer, formerly Chief Game Warden of the U. S. Government, well known as a conservationist and now Managing Director of the New York Development Association. We left Watertown at noon, and as we rode along I questioned Mr. Lawyer as to the acreage owned by the various companies interested in reforestation. I learned that holdings varied in extent from a few hundred acres for city watershed protection to 140,000 acres held by one company in the watersheds of Beaver River, Oswegatchie River and Black River. Some interest was noted in the purchasing of land and reforesting it strictly as an investment. This sort of interest will grow.

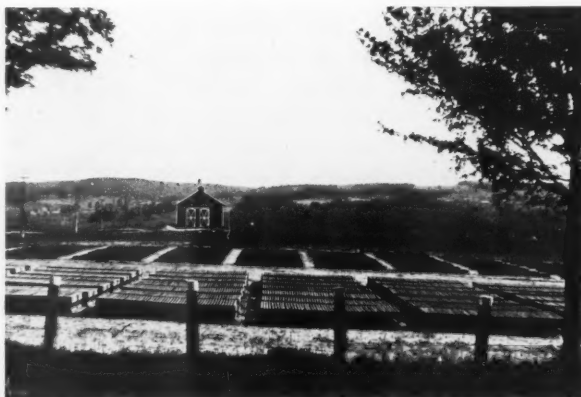
Planting, Mr. Lawyer explained, had usually cost about \$5.00 an acre, exclusive of the cost of stock, which is nominal. Spacing has been six feet by six feet, and the species include Norway spruce, about seventy per cent; white pine, ten per cent; red pine, ten per cent, and other species, including Scotch pine, white cedar, white spruce, and Carolina poplar, ten per cent. Types of soil have been carefully studied and devoted to the most adaptable tree which could be secured. Scotch pine is used only on the poorest soils. A "catch," or survival, of eighty per cent is common, and two years after planting, fail spaces are filled in with new trees. All of the areas planted to white pine have been combed over for currant and gooseberry bushes, and eradication is so complete that blister rust attack is practically unknown. A close watch is kept and preventive measures are taken against the white pine

weevil, which injures the terminal shoots.

On this trip we saw one vigorous plantation of forty acres in eight-year-old red pine, another of smaller size in white pine and scattered plantings of Norway spruce. On the lands of the Carthage Water Company we saw Scotch pine eighteen years old and from eighteen to twenty feet high. This plantation is ready for thinning.

The most impressive thing on the trip, however, was the

(Continued on page 181)



A forest nursery maintained by the St. Regis Paper Company at St. Regis Falls, New York. Pine and spruce trees are grown here to reforest the company's cut-over lands. About 5,000 acres of such lands have been planted



Typical land which the Northern New York Utilities Company acquired to protect its rights-of-way. The trees in the foreground are planted white pines, seven years old, and in forty years they should return \$300 an acre in saw timber



Study of the food habits of deer shows that they forage in the meadows, mainly after sundown

What Deer Eat

By JOSEPH DIXON

OUR National Forest officials in the West are confronted with the problem not only of keeping up the grazing capacity of their range lands, but also of insuring an equitable division of forage between our native big game animals and the herds of domestic animals. Conditions in California are critical in this respect because of the great numbers of deer, sheep and cattle involved. Some adequate conception of the magnitude of the problem may be gained from the fact that in 1925, according to the United States Forest Service, 227,145 deer; 414,199 sheep and goats; and 168,455 cattle and horses grazed in the National Forests in this one State. The Forest Service estimates that there are 605,964 deer in National Forests of twenty-six States, of which 227,145, or more than one-third, are found in California.

Fortunately no such tragic conditions as those which have made the Kaibab notorious have as yet come to exist in California, but let us be forewarned and remember that a "stitch in time" sometimes saves more than nine. Grazing complications are already present in some of our California forests.

It is obvious that if such natural resources as game animals and grazing are to be administered along sound economic lines, and sustained maximum production secured, we must know the food requirements of deer as well as of domestic stock. Given the facts, it would be possible to give fair consideration to both grazing and game interests,

but without such data proper administration is difficult or even impossible.

To this end two staff members of the University of California have undertaken an investigation to determine as accurately as possible what deer eat under natural conditions. The work was inaugurated in June, 1926, by Professor A. W. Sampson of the Division of Forestry, and supplemented, during the present year, by an independent investigation carried on by the writer. In both cases Yosemite Valley was chosen, because there we found plant growth and general forage conditions most natural and least disturbed by the grazing of domestic stock. Deer in Yosemite have a full menu to choose from. Another important point in favor of Yosemite was that wild deer have become reconciled to human beings and go about their daily life in a normal manner. Therefore, they may be observed at close range while feeding. This feature makes possible the use of the camera as a means of recording the kinds of plants grazed upon by deer. There are few other places where conditions are as favorable for accurate observation.

With notebook, pencil, binoculars, watch and camera ready for instant use, we followed the feeding deer quietly as we could and recorded the species of plants which were actually eaten. Through cooperation with the Park authorities, we were allowed to select, and save as herbarium specimens, the identical plants which the deer grazed upon. This

insured correct identification of any questionable plant, and showed the extent and manner in which the plants were browsed.

The writer used another method to express the food preferences of deer. First, the number of deer that browsed upon each species of plant was noted. The time or duration of each browsing was also recorded. By multiplying

of a tall clump of herbage. In many instances we were able to get within ten feet of a deer as it fed, and at that distance binoculars were not necessary. However, there were times, when the deer had its head down in thick vegetation, that the observers could not be absolutely sure which plant was being eaten. We therefore made it a rule to record only those plants about which there was no question. By the

aid of a 17-inch f. 5.4 Ross telecentric lens and a reflecting camera, we were able to secure photographs of deer browsing of sufficient size and clearness to show what was being eaten.

Since deer usually feed in early morning or after sundown, we found that because of poor light it was necessary to use open lens and fast plates to secure good photographs. Also because of the low position of the reflecting camera it was sometimes impossible, due to the intervening vegetation, to define in the photograph certain details which were plainly visible to one's eyes at a higher vantage point.

The food of deer varies greatly with season and locality. It is therefore necessary that observations be carried on



Documentary evidence! Deer are said not to eat Manzanita leaves, but the author photographed this one in the act

the number of deer selecting any species of plant by the minutes spent in browsing we obtained what we have designated as "deer minutes." Thus, if two deer browse on Curly Dock, each for a period of five minutes, the results would be totaled as, Curly Dock—10 deer minutes. When such observations, made daily for a period of two weeks, were computed, we began to really know what deer in that locality eat at that season of the year.

At this point let me state some of the obstacles encountered in this work. Not all deer are tame enough when feeding, even in Yosemite, to allow a person to approach close enough to make sure what plant is taken. Large leaves such as those of the California black oak can be readily identified, in fair light, by aid of binoculars at a distance of fifty yards. On the other hand, one may be within twenty feet of a deer and still be unable to identify positively the species of fine grass which is being picked out



A young buck grazing on Spanish clover. This plant is one of the most important deer foods in Yosemite, during June

during winter, spring, summer and fall in several regions. In Yosemite, we have observed deer grazing on fifty different kinds of plants in summer, yet we have seen deer brush, *Ceanothus integerrimus*, browsed only once. During winter observations we found that this same brush was sometimes more desired by deer than any other plant.

Although we watched closely we did not note a single deer browsing on such plants as larkspur and azalea, said by stockmen to be poisonous to cattle and sheep. Other poisonous leafy plants such as the cow parsnip were not even touched by the deer. On the other hand, I found that the green manzanita (*Arctostaphylos patula*), which deer are supposed not to eat, was eagerly sought by an undernourished buck. Likewise I found a forked-horn buck feeding repeatedly on California laurel, a tree which I had been told deer do not eat. After watching deer for some time I believe that they are liable to browse a little on almost any kind of plant, and I refuse to say that they never eat this or that plant.

Of the many plants eaten by deer in summer we find that over sixty per cent are taken regularly by sheep and over fifty per cent are grazed regularly by range cattle. Thus there is real competition for forage between deer and sheep, and deer and cattle.

Plans are being made to build up a reference collection of plant specimens

While it is not feasible to list here all of the plants which we have observed deer eat, it might prove interesting to know some of the leading plants taken by deer in the Yosemite in June.

The following plants are listed in order of importance, and a record of our observation is given, including the number of deer observed eating the plant and the duration



A graceful depredator. This doe browsed to a height of fifty-three inches on a Western Chokecherry bush



This chap was so engrossed with the tender, succulent young blades of Meadow Fescue Grass that he didn't mind the photographer at all

that are browsed by deer, together with notebook records and actual photographs showing the deer eating the plants in question. It is believed that only by such methods, together with examinations of stomach contents of deer shot during the hunting season, and observation on the open range, can we arrive at the facts as to what deer really eat.

or extent of browsing in minutes.

Nineteen deer were observed eating yard weed (*Polygonum aviculare*), for four hundred and four minutes; twenty-seven deer took meadow fescue (*Festuca elatior*), three hundred and sixty-two minutes; twenty-seven deer took Spanish clover (*Lotus americana*), three hundred and forty-five minutes; ten deer took Western Chokecherry (*Prunus demissa*), thirty-eight minutes; thirteen deer took California black oak (*Quercus kelloggii*), eighteen minutes; eight deer took velvet grass (*Holcus Lanatus*), thirteen minutes; eight deer took curly dock, (*Rumex crispus*), eleven minutes; two deer took horseweed (*Erigeron canadensis*), five minutes; three deer took green manzanita (*Arctostaphylos patula*), three and one-half minutes; three deer took deer brush (*Ceanothus integerrimus*), three minutes; two deer took sneezeweed (*Helenium bigelovii*), two minutes; one deer took California dogwood (*Cornus californica*), two minutes.

Trees as Memorials

BY MRS. FRANCIS EDMUND WHITLEY

AN outstanding feature of the increasing interest in the subject of trees and of forestry generally, has been the recent development of the memorial tree idea.

Trees had been planted in previous years to celebrate the visit of some distinguished foreign guest to our national shrines or to mark a historic spot or event. Arbor Day, inaugurated in 1872, offered opportunities for ceremonies of tree planting dedicated to some class or individual as well as for planting for purely practical purposes. But in most States, Arbor Day was for years largely an affair of the schools, promoted chiefly by teachers. Few at that time could have foreseen how great a factor it was to become, both in influencing public thought and in changing the face of the landscape.

Another chapter in the development of the tree-planting movement began with the construction of national highways, especially the Lincoln Highway. Gradually came the realization that such a highway, stretching across the States, would not only promote social and commercial development, but could also be made to add new resources of human interest and joy.

The General Federation of Women's Clubs were among the first to grasp these possibilities. They secured from Jens Jensen, a noted landscape architect, a comprehensive plan for highway planting, with the idea that each State through which the Lincoln Highway passed might use an adaptation from it. Since then other highways have been established and similar plans adopted.

It was in 1916, at Princeton, New Jersey, that President Wilson, Governor Fielding, and officers of the New Jersey Federation of Women's Clubs participated in tree-planting ceremonies on the Lincoln Highway. The next spring Indiana announced plans for a "memorial mile" on the highway in each county through which it passed. Within two or three years St. Joseph County had planted sixteen miles of the highway with trees in tribute to its

soldiers. Out in Nevada a mile of memorial Carolina poplars was planted on either side of the highway. Other States followed with similar plantings.

Through all of these progressive stages in the appreciation of trees as living memorials, the way was prepared for the tremendous impetus given the movement by the World War. On the very day after the armistice was signed The American Forestry Association made the suggestion that trees be planted in honor of America's soldiers and sailors, both as memorials for the dead and as tributes to the living. The suggestion was welcomed by the public. Here was something dignified and satisfying, within the reach of all desiring to honor those who had offered life at their country's call.

The impulse swept like a wave over the land. The American Legion adopted the idea whole-heartedly, as did ex-service men generally. One of the first acts of General Pershing after his return from France was to plant memorial trees in Central Park, New York; and later, the last public service of Colonel F. W. Galbraith, the beloved commander of the American Legion, was the planting of a group of memorial trees at the intersection of the Lincoln and Dixie Highways. Very impressive, also, was the planting of a tribute tree near the grave of the Unknown Soldier at Arlington by the Disabled Veterans of the World War; and equally so the tree planted by the pupils of the Force School, in Washington, in memory of their former school mate, Quentin Roosevelt.

During Armistice Week, 1921, Mrs. Warren G. Harding planted two trees on the Lincoln Memorial grounds in honor of the Allied armies and navies, and the trowel she used has been employed for similar service all over the land.

The colleges took up the plan; the University of Illinois planted 173 trees on the drill field in honor of those who had given their lives; the University of Maine planted



Memorial pines, the last of a virgin forest near Grayling, Michigan, dedicated to Major Edward C. Hartwick, who lost his life during the World War

tribute trees on the campus. At Seattle, Washington, the State university is planting a splendid memorial arboretum. And so we might go on with the long list of colleges which have observed Arbor Day with new and deeper meaning.

Organizations of all kinds began planting trees. Perhaps no one of these did more to make general the thought of trees as memorials than the General Federation of Women's Clubs. In cities, villages, and rural communities they have joined with schools, churches, and ex-service men in the planting of memorial trees. They have reports of the planting of hundreds of thousands of trees—nearly 370,000 in the last year alone—and these are nearly all recorded as belonging to memorial groves or roads, if not separately dedicated.

These records reveal many stories of real heart interest; especially is this true, perhaps, of the trees planted in school yards to honor the memory of former pupils. One cannot forget the little school on the great plains where all summer long the students carried water in milk cans or hauled it in barrels to keep a little tree alive that had been planted to honor their soldiers. One remembers, too, the two trees in a southern school yard which bear the names of brothers who rest in far-off France.



This tree planted in a Michigan school yard as a memorial to soldiers is symbolic of a nationwide tree memorial movement

The suggestion of The American Forestry Association that the graceful white birch be chosen for "Mother's Tree" has met with nationwide approval. The first birch was planted at Reading, Pennsylvania, and the spade used was suitably inscribed and presented to the Association to be sent wherever needed for such a purpose.

Another interesting phase of the movement developed in the "Roads of Remembrance." The Woman's Club of York, Pennsylvania, set a high mark when they planted twenty-five memorial miles along the Lincoln Highway. The Bankhead Highway, in the South; the Victory Highway, especially that section passing through Kansas; the Andrew Jackson and the Lee Highways called forth the interest of the citizens. Bronze markers were placed on many of the trees, bearing the names of those commemorated. Pages would not tell of these or of the roads linking city with city where trees of remembrance honor the men who, "along the tree-shaded roads of France, went to keep tryst with destiny."

The Victory Memorial Drive was dedicated at Minneapolis with impressive ceremonies while airplanes dropped poppies along the roadway; the historic way to Chickamauga is being made more glorious by the women of Chattanooga;



An ardent tree lover, the late Mrs. Warren G. Harding, took part in many memorial tree ceremonies when she was the beloved First Lady of the Land. She is pictured here planting a memorial tree in the Arlington National Cemetery

in Mississippi, where a remarkable tree-planting campaign had prepared the way for needed forestry legislation, the native trees of the South are planted along the roadways. In Georgia the women celebrated Arbor Day by planting roadside trees in honor of the Governor, who was an ardent tree planter.

Still another form of tree memorials is found in the groves and forests dedicated to some honored name. One thinks at once of the groves of giant redwoods in California; surely no nobler monument could be pictured than the majestic forest where, through the green twilight, a sunbeam finds its way to the tablet bearing the name of Colonel Bolling, the first officer killed in the World War. There is one dedicated to Colonel Henry S. Graves, Dean of the Yale Forest School. There is the Federation Forest, the Russ Pioneer Memorial, and others.

In Washington, too, on the Sunset Highway, there is a remnant of the virgin forest preserved by the Federation of Women's Clubs. In this sixty-five-acre tract of giant Douglas fir is a veritable Forest Hall of Fame, where mighty trees bear the names of pioneer citizens and former Federation presidents.

San Francisco has a National Memorial Grove, where two trees from each State commemorate the mothers of the men and women who served in all of the wars of the United States.

New York has two forests planted in honor of women. On Lake George there is an area of 10,000 young white pines dedicated to the memory of Gene Stratton Porter. The other, the Clara Barton Memorial Forest, is on Lake Saranac. In the forest reserves of Cook County, Illinois, representatives of the University of Chicago, the University of Illinois, and the Chicago Historical Society planted a hundred-tree apple orchard on the sesquicentennial anniversary of the birth of John Chapman, known as "Appleseed Johnny," who went through the wilderness planting apple seeds for the future settlers. Admirers of Luther Burbank planted a grove of pines on the summit of Mount Frazier. Michigan rejoices

in a recently acquired State park of 8,000 acres, including a tract of giant white pines, the last of the virgin pine forest. This gift is offered by Mrs. Karen B. Hartwick as a memorial to her husband, Major Edward E. Hartwick, who died in Paris in 1918.

But to attempt to name all is hopeless. The American Legion alone has many leafy roads and shrines dedicated to the men who served in France; the Federation of Women's Clubs are establishing Federation forests in many States. And, as the highways are permanently located so that it is practicable to plant them, thousands of memorial miles will be added to those which already offer new beauty and interest to the traveler.

We often deplore the legacy of evil, of unrest, and revolt

left us by the World War. But out of all this experience, with the common impulse to express in some concrete way our sorrow and our deep pride, there has come to our people a new appreciation of the value and glory of trees. There is a new realization that, while the highest art of the sculptor and architect may well be employed to keep alive the memory of dear and honored names, nature offers these living memorials, these trees which will for years to come bring to the land a benediction of beauty, a prompting to finer loyalty.

Yet, however fine and symbolic of many illustrious deeds and untold sacrifices, the memorial tree stands out as a greater tribute to nature. It represents a magnificent sort of reciprocity—

that we should give back to a patient and unselfish nature the same glory that is given us through the tree. It characterizes a keener and broader sense of appreciation, of responsibility, of pure, unadulterated enjoyment, that we should give back to nature the glory that is hers.

And nothing is more appropriate for this sort of reciprocity than a tree. It is a living memorial to a living world where sentiment is ruled by ideals—ideals that find expression in a manifestation of life and beauty.



A Forest Hall of Fame. On the Sunset Highway, in Washington, these giant Douglas firs stand as memorials to pioneer citizens. They are maintained by the Federation of Women's Clubs

Leavitt Hits Flood Program

Congressman Charges Mississippi River Commission with Ignorance and Misconception of Place of Forests in Flood Control

THAT part of the special flood report submitted by the Mississippi River Commission which deals with forestry as a factor in flood control constitutes a brief but amazing chapter to form part of a serious public document. After alleging that a careful study has been made of the possibility of obtaining flood relief from reforestation, the report states conclusions as follows:

- (a) That reforestation would not be efficacious.
- (b) That reforestation for flood control would be economically unsound.
- (c) That the remedy sought in reforestation would be too slow in effect.

The conclusions of the commission are erroneous, uninforming, and are based upon a misconception of the facts. The commission states that for a forest to arrive at the full benefits for flood control requires "50 to 100 years, or even longer." This is an absurdity. To produce high-grade saw logs does require 50 to 100 years, or even longer, but the full benefits of forest planting in the form of stopping soil erosion are usually reached within 5 to 10 years, and full benefits in the form of water storage and stream-flow regulation are reached within 10 to 20 years. The commission has already been working on this problem since its creation by Congress in 1879, a period of 48 years—a period nearly five times as long as that required to check erosion by reforestation and more than twice as long as the maximum period required to secure full benefits from forest planting in the form of water storage and stream-

Mr. Scott Leavitt, Congressman from Montana, addressing the House of Representatives on February 2 scathingly arraigned the Mississippi River Commission for its failure to deal constructively and intelligently with forests in its flood control program. His address constitutes such a timely and masterly analysis of the commission's bungling of the forest issue that it is reproduced herewith for the information of our readers.—Editor.

flow regulation. There is nothing to indicate that the other necessary engineering works will all be completed at a date earlier than the maximum 20 years required for a forest.

Equally absurd is the commission's claim that reforestation for flood control would be economically unsound. It states:

"Even if it could be shown that reforestation would be beneficial in its effects on floods, it must be granted by its proponents that anything short of reforestation on a very large scale would not have a measurable effect on Mississippi River floods. Turning productive farm lands on such a large scale back to forests would be economically unsound."

Now, notice particularly that last statement from their report:

"Turning productive farm lands on such a large scale back to forests would be economically unsound."

I wish to call the attention of the Congress to the fact that no one in official position in the Forest Service, no one in the profession of forestry anywhere, has ever suggested the turning back to one acre of agricultural land to forest land. This has never been suggested from any source, but this is only one of the false assumptions to which attention could be called in the report of the Mississippi River Commission. The report shows absolute ignorance and misconception when it comes to treating the subject of forestry in connection with this great program.

The Mississippi River Commission takes for its study two areas in the northern part of Minnesota.

I am acquainted with



Mr. Scott Leavitt, Congressman from Montana

them. One of them is an agricultural section and the other is a timbered section in the vicinity of Lake Superior. Their statement indicates an utter lack of knowledge of the effect of forests upon stream flow. No foresters advocate "turning productive farm lands back to forests." Productive farm lands, under proper cultivation and management, have a beneficial influence upon stream flow substantially equivalent to forest lands. They must have physical characteristics enabling them to take up a large part of the rainfall and utilize it in producing crops. Forests are most effective on steep land from which the rainfall otherwise would rush off, carrying with it the fertility of the top soil. Encouraging and protecting forests on such lands has a beneficial influence upon stream flow. It is the waste lands and lands which wash badly when denuded that contribute most largely to flood dangers and flood damage.

The report of the Forest Service, submitted to the House Flood Committee, indicates a total area of approximately 250,000 square miles of critical areas on the Mississippi watershed, embracing a total area of about 160,000,000 acres, or about 20 per cent of the total area of the Mississippi Valley. These lands contribute a large share of the burden of half a billion tons of silt carried into the channel of the Mississippi River each year. This silt increases the volume of the flood as well as increasing its destructiveness. The reasoning followed by the commission and the evidence submitted in attempting to prove that forests would not be efficacious is naive, to say the least. It bases its conclusions upon certain data obtained by measurements of annual run-off from the two watersheds in northern Minnesota. One watershed is largely farm land; in other words, the very kind of land that should be cultivated and the kind that foresters understand, with proper cultivation and the growing of farm crops, is not detrimental from a flood-control standpoint. The other area was in the lumber regions of the lake district of Minnesota, a region which because of its level topography, porous sandy soil, and innumerable lakes, was classified by the Forest Service as a region within which forests had little influence upon stream-flow regulation.

The commission states that its records show that there was some increase in the percentage of run-off from this timbered watershed during the period of deforestation, followed by a gradual recovery, until the run-off from the area with growth of young timber was no greater than it was in the virgin forest period. But the commission failed to carry its calculations to their logical conclusion. An additional column should be added to the table found on page 74 of its special report. The efficacy of a watershed is determined not by the percentage of the total rainfall which appears as run-off, but by the actual number of inches of rainfall actually retained by the watershed and reconveyed to the air without running off. Take the table on page 74 and add to it a third column entitled "Average number of inches of water actually retained each year." Making this calculation based on the commission's own figures, the number of inches of rainfall actually retained each year by the watershed was as follows:

Period ending—	Inches
1891-----	20.21
1898-----	20.42
1905-----	19.54
1912-----	18.66
1919-----	18.91
1926-----	18.17

It will be seen from this that instead of there being the full recovery of the watershed, as reported by the commission, there has been a steady falling off in the actual amount of water retained by the watershed each year. The difference between the first seven-year period and the last seven-year period averages over two inches per annum. Applying this difference to the entire 120,000 square miles of forest land in the upper Mississippi and the Ohio River drainage we get a total volume equivalent to 12,466,000 acre-feet. According to General Jadwin's report 7,000,000 to 11,000,000 acre-feet of storage will reduce the flood stage of the Mississippi by one foot. By means of the vast potential storage thus indicated the flood crest might be reduced between one and two feet. Whether such a reduction would be important would depend upon how near the crest of the flood approached the top of the levees. At any rate, it can safely be said that the floods would certainly be diminished both in volume and destructiveness by preventing erosion. It is also certain that increasing the water-storage capacity of the forest would materially reduce the flood crest so that the run-off would take place during a longer period of time. And in addition to the claims made by the Forest Service the actual figures presented by the commission show a decided increase in the amount of moisture retained by virgin forests, which means, conversely, a decided decrease in the volume of run-off. Stated in its simplest terms, the influence of forests upon floods and run-off is that instead of a vast volume of muddy water rushing off in a brief period, the run-off is in the form of clear water of reasonably uniform flow. High levels are reduced, low-water stages increased. It seems in the interest of clear thinking and clear action upon our part, as a responsible body, that these facts should be known.

The Forest Service has not recommended to the Flood Committee that it specifically ask for the appropriation of a single dollar for flood control through forestry. It has urged upon the committee, however, that the proper protection of our forests and the intelligent application of sound forestry practice in the Mississippi Valley would give to the threatened region a considerable measure of flood relief without any expense being incurred directly for that purpose. The forests themselves will pay their way with timber and other products. I emphasize this statement. The Mississippi River Commission have begun by taking areas that no forester would take to prove the value of forest cover in flood control, and then they have disproved their own case with regard to that area, even though it could not fairly be taken as a characteristic area at all.

I am sorry I have not the time to discuss fully the report of the Chief of Engineers of the Army, General Jadwin, but

(Continued on page 186)

The Four Thousand Dollar Dog

By WALTER P. TAYLOR

Photographs by the United States Biological Survey

A PORCUPINE hunt had been arranged. All was in readiness. The car had been gassed, oiled and watered. Field glasses, guns and ammunition were aboard. The forest ranger climbed in and stepped on the starter.

"Where's the dog?" he suddenly inquired. Sure enough, the party was about to leave without the most important member of the expedition.

"Crook!" called the ranger. "Crook!"

A pleasant-faced dog of intelligent mien and generous proportions responded almost immediately, taking his place on the running board of the car.

The morning was cool and fine, the landscape flooded with light. The way lay through stretches of handsome yellow pines, sunny woods with no brushy undergrowth; over arid valleys, through well-forested, steep canyons; past Mexican villages in which the houses were flat-roofed, with mud ovens in the yards, unmistakably exotic in appearance. It was the home country of Kit Carson, northern New Mexico, a region of mesas, canyons and majestic mountains.

As the machine moved along, Crook, the porcupine dog, stood well up on the running board, looking straight ahead, apparently enjoying the brisk breeze. Speed he seemed to enjoy. Whenever the car approached an out-curve at a pretty rapid rate, it seemed that Crook would inevitably be thrown off balance and flung from the car. The ranger never slackened his pace, hitting the curves at thirty-five. But with the ease of long practice Crook subsided into the space between the fender and hood, just behind the front light. There he lay, wedged as neatly as you please, in not

the slightest danger of dislodgment. As soon as the curve was left behind, up bobbed Crook again, standing erect, facing straight ahead. When the machine approached a turn in the opposite direction, he seemed to understand that the force of the turning would merely tend to keep him solidly against the hood, so he remained standing all the way around, as nonchalant as a captain on the quarter deck during a calm.

"Almost human, that dog!" commented one of the party, enthusiastically.

After a drive that was all too short, the automobile was brought up at the headquarters station, on the outskirts of a little Mexican village in the foothills, where the government official, as is often the case, was the only resident Anglo-American. After a hearty meal and a short rest, the party started out with saddle and pack horses. Crook was delighted with this turn of events, and almost as excited over the hunt as a small boy, though considerably more sedate. As the horses tended to traverse the shortest distance between two points, Crook actually covered the longest, beating

back and forth along the trail, climbing the hillside above and into the canyon below, busily searching for the elusive porcupine, now very scarce in this particular region.

Crook worked with abounding diligence, sniffing the ground, the breeze and tree bases. At intervals he scanned the tree-crowns closely.

"This is not very good weather for work of this sort," explained the ranger. "It's too hot and dry. Crook can always find more porcupines on cool and moist days. The humid air seems to carry the scent better."



Crook, the "Four Thousand Dollar Dog," in his seat of honor, en route to hunt his prickly enemy, the porcupine

"Crook seldom finds young porcupines," he continued a moment later. "Presumably they possess less odor. Another peculiarity is that female porcupines about the time of the birth of the young are much less frequently found than the males."

As the party rode quietly through the scattered woods, a staccato bark, followed shortly by two more, broke the stillness, perhaps one hundred yards off the trail. The noise-making at this stage was notably self-contained, showing little of the frenzied enthusiasm that distinguishes many hunting dogs.

"He hasn't seen it yet," explained the ranger, referring to dog and porcupine, respectively.

Shortly another bark was heard, this time with a tendency toward high pitch and a break in the voice. Even the vet-

eran porcupine dog will become excited at critical moments.

"Sounds good!" interpreted the ranger.

As the hunters approached they noticed that Crook was gazing fixedly into a certain black jack, interrupting his vigil only to look around at the ranger. Sure enough, there was the porcupine, a lethargic lump of laziness, apparently caring little whether school kept or not. The animal was sprawled out over a crotch thirty-five feet up in the black jack, and apparently asleep.

At a shot from the ranger's gun down tumbled his lazy lumpiness. Crook watched the descent with the keenest kind of interest. The porcupine hit the ground but was not quite dead, moving just enough to tantalize even the best controlled dog into a frenzy of desire to rush in and finish him. But not Crook, the porcupine dog. Had he been in

the habit of succumbing to this obvious impulse he probably would never have become a porcupine dog at all. Concentrating his full attention on the porcupine, he bided his time.

Presently he seized the porcupine by one of its fore feet and attempted to turn the animal onto its back. As is well known, the porcupine has no spines on its lower surface, and is therefore its vulnerable spot. Once pinioned on its back the porcupine can be finished off at leisure. But this the animal knows, and turning on its back is the very last of a long list of



Crook regards his prickly enemy with keen interest, looking for a good opportunity to attack

Crook in action, intent on the business in hand. The enemy is on his back and he is likely never again to taste the succulent bark of a young pine tree



things the porcupine does not wish to do. Indeed, it evidences every sign of acute annoyance when one attempts to upset it in this manner, and its resistance is of the stubbornest sort. Crook had a job on his hands and he knew it. He was all industry and patience. After working the porcupine by the forefoot for a time, he got a chance at the nose, which he seized. Even this did not reduce Mr. Porky to the desired capitulatory disposition. Presently Crook grabbed a hind foot, keeping at it tenaciously until the unlucky prickly-pig had to surrender. Over it went, and Crook soon finished it, not savagely, but simply matter of fact, an inevitable item in the routine of a porcupine dog's existence.

The skill with which the dog avoided the quills was amazing and almost unbelievable. Although several porcupines were found, and each one was finished off by Crook, not a single quill did he get into his skin until his well-intentioned but desperately clumsy human companions tried to help him.

Anyone who has handled porcupines or who knows anything about their protective armature will concede it a remarkable feat for a dog to handle and kill a porcupine, even if it is badly wounded, without getting a skin-full of quills. Of course, Porky does not throw its quills, but it is mighty promiscuous with that powerful quilly tail. Although apparently lacking the ability to aim a blow, the porcupine, when attacked, brandishes the tail about in an extremely extemporaneous manner. The quills, needle-sharp, are provided with small but indubitable barbs, and when on contact with the skin of a dog or other objects, abandon their early association with the skin of the porcupine and hook themselves into the surface of the oncoming object. Here they proceed to dig in. Every movement of the affected portion

of skin or muscle merely serves to drive them deeper. Once entrenched, it is a painful tearing job to remove them.

Crook's experience with these "devil's needles" has been extensive. When the bungling assistance of the hunters resulted in his receiving a number of quills in the skin of his face, the ranger had him lie down, and proceeded to extract

the quills. The dog submitted to the ordeal without a whimper. Two or three of the quills had penetrated clear through the cheek into Crook's mouth. Even these the ranger extracted with not the slightest difficulty, so far as the dog was concerned, although one snap of those powerful wolf-like jaws would have made a very troublesome wound.

On several occasions Crook is reported to have overcome and killed unin-



Finishing up a good job, Crook is putting on the last touches and another bark-eating porcupine is no more. In the Southwest, Crook has earned anew the right to his title of the "Four Thousand Dollar Dog"

jured porcupines without assistance. But apparently he appreciates the danger and difficulty of such a conquest and hesitates to undertake it.

It is obvious that Crook is an unusual dog. It is certain that not all dogs have the temperament to become successful porcupine hunters. Certain traits of character, too, are requisite. Obedience is essential. An even, well-balanced disposition is necessary. A dog that becomes over-enthusiastic or highly excited is likely to forget itself at the crisis and charge headlong into the object of its attack.

Mr. G. A. Pearson, Director of the Southwestern Forest Experiment Station, calls attention to the fact that the porcupine peels the bark from conifers and girdles pines, ruining much good timber. He estimates that anyone who kills a porcupine has saved ten dollars' worth of timber. At last accounts, Forest Ranger G. L. Wang, of the Carson National Forest, credits his dog with the location of more than four hundred porcupines. This makes Crook a four thousand dollar dog at the very least!

From Fire to Snowslides

By CHESTER M. ARCHBOLD

DID IT ever occur to you why so many young rangers are getting gray and bald-headed? It is fire. It was my big problem when I was a district ranger on the Salmon National Forest in Idaho; and after several years at it I found myself thinking and talking mostly in fire terms. It was quite natural, then, that when I was transferred to Alaska last year I anxiously awaited the fire season, entertaining a dim hope that in this land of greater rainfall I could breathe more freely and not lose so much sleep at night while planning my campaign against the "red peril."

During the first few months on my new territory I cruised around among the many islands and along the narrow strips of mainland that make up my district and was greatly encouraged to find the scar of but one large fire. This was on the mainland near the head of Bradfield Canal, and after a close study I determined that it happened years ago. For the first time in three years I relaxed.

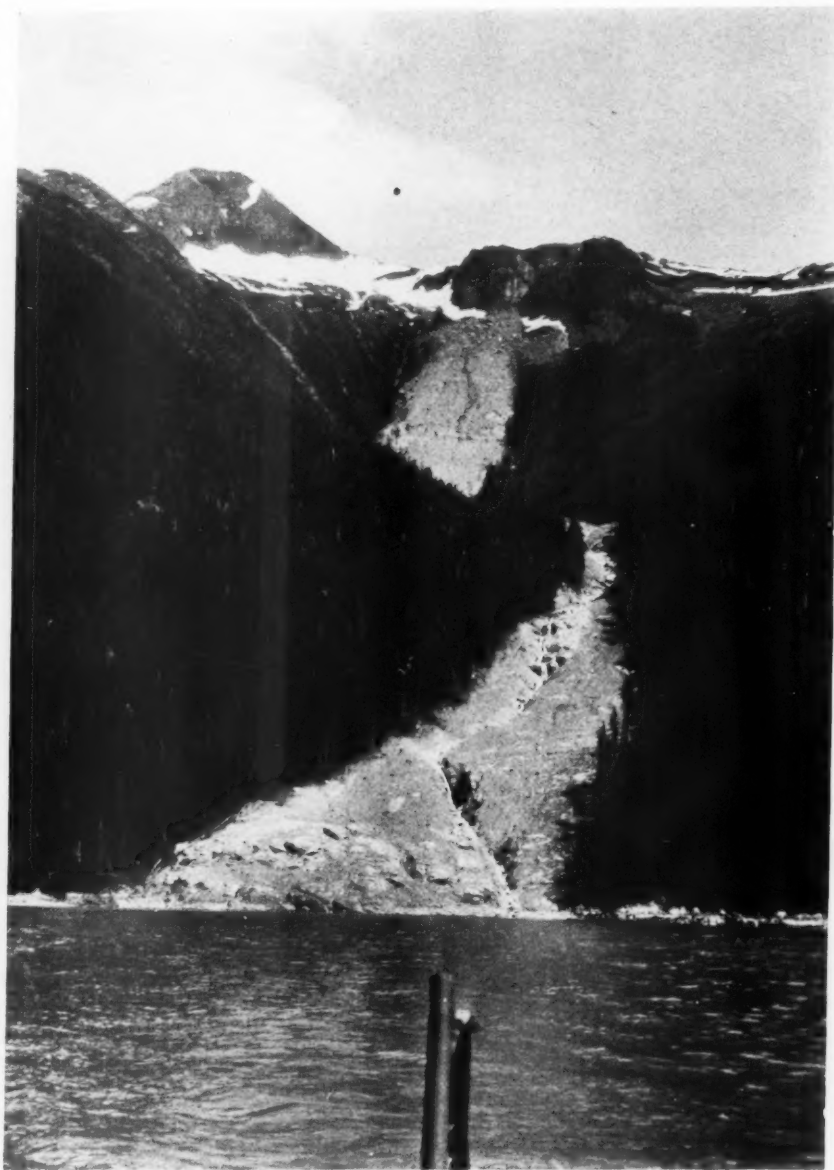
But soon a dry spell broke

and I began to get nervous and search the horizon for smoke. Habit, I guess. Wires came from the supervisor's office warning me of the lowest humidity in years and that loggers should be notified to be careful. In a short time the woods became perilously dry and the long moss was like tinder. But tourists in Alaska do not run through the forest

and lightning storms are few and far between. Thus my worries were for naught. During this period of high fire hazard, I did not report a single fire. In fact, I failed to find a wisp of smoke.

A heavy rain came after this extremely dry period and the woods were fire-proofed again. A rain in Alaska is not merely a passing shower; rather it is a steady downpour for days and possibly weeks. A ranger does not lose much sleep over the fire question, although we have our fire organization in working order ready for any emergency.

In this region the mountains rise abruptly from the water's edge, climbing rapidly, in the short space of a mile, to elevations of from



The highest pinnacle is Waterfall Peak, 3,384 feet elevation. The white streak on the face of the cliff is where the slide started after a giant rock broke away



This photograph in Thomas Bay, Alaska, shows old rock and landslides within half a mile of the newer slide

three thousand to eight thousand feet. At the lower reaches of these mountains a belt of hemlock and spruce timber extends around the shoreline and up the slopes of the mountains for a half mile or more. And as the coast of Alaska is of recent formation, geologically speaking, the soil is very shallow. In fact, there is hardly any soil at all, merely a shallow layer of humus and decayed tree and plant growth.

It is remarkable how trees can grow to such enormous sizes in this shallow layer of soil, but the roots creep along the surface of the solid rock and through the tiny crevices and cracks, finding water and mineral matter in sufficient quantities to enable the trees to grow.

But the fact that this heavy stand of timber grows in such a shallow layer of soil and on steep slopes, makes it very susceptible to land and snow slides. Almost everywhere one wants to look along these steep slopes one can see great paths cut down through the dark green

timber, filled with the lighter green of huckleberry bushes and devil's club patches. These are the scars of land and snow slides.

Early in March, while on my way into Thomas Bay to tend the stream gage located on Cascade Creek, I noticed a particularly steep slope covered with old landslide scars. This interested me greatly, and on the monthly trips thereafter I found time to study them and to ponder upon the great amount of timber destroyed by this uncontrollable action of the earth. Then, in June, I noticed a great white streak running from near the top of the mountain down to the bay, and I knew that it had been caused by a great landslide since my last trip.

Although the mountain was 3,384 feet high, I could easily trace the slide to its origin at the base of a high cliff near the summit. I could even determine the cause of the slide.

(Continued on page 184)



A close-up of the slide where it slipped into the bay after crashing through the forest, sweeping great trees off the hills like so much tinder

Conference Spurs Forestry Onward

Annual Meeting of The American Forestry Association Features Forestry as Vital Factor in Permanent Prosperity of the Mississippi Valley

FORESTRY as a factor in flood control, industrial prosperity, and the economic use of land resources featured the 1928 annual meeting of The American Forestry Association at St. Louis, Missouri, February 17 and 18, jointly with The Missouri Forestry Association.

Members of the two associations met with outstanding foresters and conservationists from all sections of the nation in one of the most enthusiastic and significant meetings in the annals of forestry.

They set down a series of truths and facts that will go far to make clearer in the public mind the place of forestry in any plan to control floods and in the economic and social development of the great Mississippi Valley. The clearest explanation yet given of forestry as an aid to flood control was voiced by Col. William B. Greeley, Chief of the United States Forest Service, in a paper read by R. Y. Stuart, Assistant Forester. The Chief Forester declared that, while the immediate need in the Mississippi basin is for the engineer, a specific program of forest restoration and extension is necessary to the ultimate control of floods.

Added significance was given the meeting because of the fact that it was held at St. Louis, centrally located in the area where reforestation as an aid to flood control is most urgent. That the tone of the conference imbued the forestry movement with greater power was reflected in the great interest it exerted.

George D. Pratt, President of The American Forestry Association, presided at the first session Friday morning at the Statler Hotel. In the afternoon session the Mississippi Valley was presented as America's greatest conservation problem, and many noted speakers, among them Hon. John

M. Parker, former Governor of Missouri, analyzed the necessity for assuring permanent prosperity to this flood-stricken region by the application of forestry and other practices.

The Saturday morning session was devoted to forests and industry and flashed time and again the common recognition of mutual interests, both economic and social, that is giving forestry a new interpretation and a broader vision. Public

education in forest fire prevention, combined with discussions on timber growing, gave the afternoon session an interesting and progressive tone. A number of demonstrations of educational methods proved exceptionally convincing and enlightening.

In his paper, "The Meeting Ground of Forestry and Flood Control," Colonel Greeley prescribed certain forestry practices as necessary if the resistance of the whole Mississippi Valley is to be built up against the destructive action of water. Application of all the knowledge of the effects of forests upon stream-flow and the water-storing capacity of forest cover is necessary, he maintained.

"There should be no exaggerated notions of what forestry can accomplish in controlling the behavior of streams," declared Colonel Greeley, "and no unwarranted assumptions that forestry, or any other form of land use, can take the place of engineering structures in protecting areas subject to overflow from the flood discharges which must always be anticipated in the Mississippi River.

"We do not know as much as we should about the effects of forests upon stream flow. Hence, it is impossible to express those effects in exact quantitative terms as the engineer



GEORGE D. PRATT
President of The American Forestry Association



Miss Martha Berry



William B. Greeley



John M. Parker



Wilson Compton

can estimate the impounding capacity of a reservoir or the volume of water that may be carried safely past a levee of given dimensions.

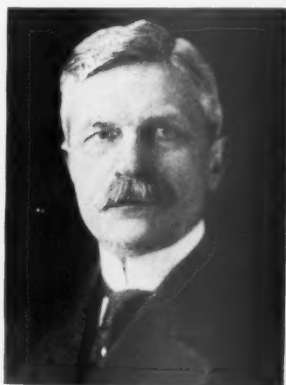
"We do know, however, that forests hold back run-off and bind soil in place better than any other form of vegetative cover. We know that forests usually retard the melting of snow. We know that they reduce the run-off through the amount of water drawn up from the soil and transpired into the air from the leaves of trees. We know that the trees themselves, the underbrush beneath them, the mat of leaves and other litter on the ground, and the roots and humus in the soil itself retard run-off more than bare soil or other forms of vegetation. We know that these same factors, particularly the root systems and the amount of humus constantly fed into the soil, make the earth beneath a forest more porous and able to hold more water before becoming saturated. We know that these same influences protect the soil from the eroding action of water and hold it in place to a much greater degree than where the soil has no such protective covering.

"We know that the water-storing capacity of a forest, like the water-storing capacity of any reservoir, has its definite limits, and that, when these limits are exceeded, water overflows into the stream channels. We know that while the storage capacity of any acre of forest is small in comparison with prolonged rains, the aggregate storage in large areas of

forest on the headwaters of a river is great. We know from much experience and direct observation that streams originating in forested basins are clearer of silt than streams originating elsewhere; that the seasonal discharge of water from such basins is more uniform; that its flood crest is usually lower. We know that the springs and other sources of water in rainless periods are better sustained. . . .

"It is necessary to employ sanity and common sense in ascribing a beneficial rôle to forests in the regulation of streams. The problem is a complicated one and it is impossible to make a quantitative analysis showing the precise influence of every element entering into the equation. But the experience of the United States, as well as of every other nation on the face of the earth, bears testimony to the fact that under the conditions existing on at least some portion of the drainage basin of every large river system, forests do exert a positive beneficial influence, first, in retarding flood discharge and equalizing flow between the season of freshet and the season of drought; and, second, in reducing the silt burden carried by the streams.

"The report on 'The Protection Forests of the Mississippi River Watershed and Their Influence on Flood Prevention,' submitted to the Flood Committee of the House of Representatives by the United States Forest Service, shows that the original forested areas in the Mississippi drainage have now been reduced by one-half. They com-



Charles Nagel



Devere Dierks



H. M. Wilson



John D. Rue

prise today about 250,000 square miles, or twenty per cent of the basin. These remaining forests have been largely cut-over and include 35,000 square miles so denuded of tree growth as to be classed as waste lands. . . .

"While necessarily a rapid and preliminary survey, this study of the Mississippi basin, together with much other information obtained by other observers, is sufficient to indicate that there is a real need for building up the resistance of the valley to destructive water discharge, and that forestry has a definite place in that undertaking.

"From the standpoint of control of the Mississippi River system, of and by itself, for all the purposes which such control should contemplate, the benefits obtainable from an aggressive program and correlated methods of soil and water conservation are far from inconsiderable. The aggregate effect, year in and year out, should be an appreciable holding back of excessive rainfall, an appreciable lowering of flood crests, and an appreciable lessening of their destructive power. Of doubtless equal moment should be the decrease in the soil carried by the streams and in the silt burden with which the flood control engineers must contend. To the extent that reservoirs are incorporated in the plan for the control of the Mississippi, forested watersheds will protect reservoirs from silting, thus adding to their efficiency and prolonging their life. Better regulation of the flow in the individual tributaries of the river, even of the small feeder streams, will reduce the local damage from floods and increase the flow of water during the normal periods of low discharge. Safeguarding the navigability of the Mississippi River system, protection of the irrigation systems yet to be installed in many of its western drainages, greater security for hydro-electric developments bound to be largely multiplied as time goes on—these are all phases of public benefit from the wise conservation of a great natural resource which forestry will promote.

"The meeting ground between forestry and flood control has already been laid down in the general policy and laws

of the United States. Our organic legislation has defined the regulation of streams and control of floods as one of the specific purposes of federal activities in forestry. It now remains to define this relationship in a specific plan for the Mississippi basin. While we know that more forest protection, more forest planting, and more public forests are needed, while we are indeed ready to speed up these undertakings in certain places where their necessity is most obvious,

the soundest attack upon the greatest conservation problem of the United States lies in thorough planning at the outset—planning in which forestry will be fitted into its proper place in the undertaking as a whole."

Hon. John M. Parker, former Governor of Louisiana, termed the Mississippi Valley project America's greatest conservation problem, and called for immediate and united action on the part of foresters and engineers for the protection of life and property in the flood plain. Aldo Leopold, of the Izaak Walton League of America, spoke on the sportsman's interest in flood control, and made a magnificent plea for the protection of wild life in the Mississippi basin.

Forestry was discussed from both the industrial and public viewpoints during the morning session. Dr. Wilson Compton, Secretary and Manager of the National Lumber Manufacturers Association, spoke on "What Industrial Forestry Asks of the Public," and Mr. S. T. Dana, Dean of the Michigan Forest School, presented the subject, "What Public Forestry Asks of the Lumberman."

In brief, Dr. Compton declared that industrial forestry has a right to ask of the public, first, tolerance and understanding, and, secondly, a sane conception of industrial forestry, free from sentimental extravagances. He further stated that the public should extend to private timberland owners taxation adapted to the peculiar nature of timber property and adequate protection against the menace of forest fires. Good public manners in and toward the private forests and suppression of the fallacious doctrine that curtailment of the use of forest products will encourage the



The "Forestry Cup" of The American Forestry Association awarded to the Western Forestry and Conservation Association for the most effective forestry poster.

growing of forests, are also asked by industrial forestry, he said.

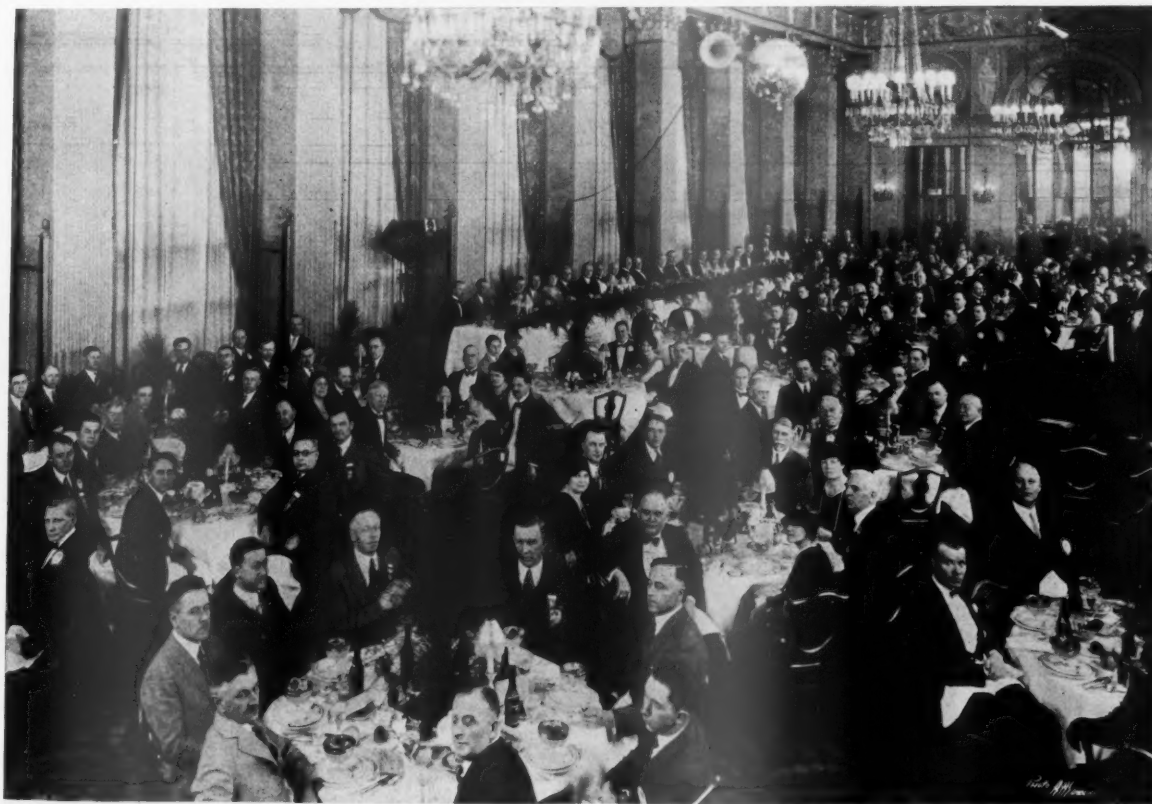
"Public opinion attaches to forests something more than the general public concern in the well-being of industry generally," declared Dr. Compton. "It demands forests for reasons which have little in common with the objectives of the individual business man engaged in industrial forest management. Public opinion, for example, holds more or less to the belief, now generally discredited scientifically, that forests have much to do with climate and weather, with aridity and humidity. It also believes that there is some considerable relation between disastrous floods of wide extent and forest cover, between forests and the variations in stream flow that affect navigation and domestic water supplies. It knows that forests are vitally related to outdoor recreation, the enjoyment of the natural scene, and the preservation of wild life. It demands forests for all these collateral reasons, besides the ordinary economic consideration, and it does not wish to abate its demand in accordance with the economic laws which rule private forest production just as all other private enterprise. But a debate with the adding machine is no more likely to be successful when conducted by a nation than when attempted by an individual. In the end, public opinion will recognize economic laws in practice as well as in theory or it will have forest growing on its hands as a public function.

"To conform to these limitations its general requirement that forest land owners shall grow and maintain forests,

the public must learn to resist the all too widely held fallacy that the way to get more trees is to hoard those which we now have. It is obvious that nowadays the disuse of forest products must be immediately translated into the abandonment of their sources. When the forests were supposed to be inexhaustible—and were, indeed, considering the demands then made upon them—the use or disuse of forest products had no relation to forest growing. It was not conceivably in the national picture any more than the perpetuation of air is dependent upon our breathing it. But now the use of forest products on a liberal scale is the only way to maintain the economic stimulus to tree production. To cut off the demand for lumber and paper and the thousands of different articles that are made of wood would not only remove the incentive to reforestation, but would render the standing forests commercially valueless and non-productive. . . .

"The main hope of a rapid regeneration of our forests lies in the potentiality of the remaining virgin timber and mature second growth to finance the building of the forests of the future. The old forests, if liberally patronized, can carry the new forests through their long period of non-productivity. So, people must cease to complain, as of something deplorable, of the steady cutting of virgin forests despite an acknowledged condition of national timber depletion. We cannot consume old trees and still leave them in the forest. Forestry dooms the wild forest. The board-buyer is the necessary counterpart of the board-grower.

(Continued on page 188)



The Banquet in the ball room of the Statler Hotel was one of the outstanding events of the annual meeting

Dwarf Ev

Their Use In Orn

By ARTHUR H. C



This doorway has been exquisitely treated with a mass planting of varied evergreens, made even more beautiful by their garment of snow

OF ALL plant materials the medium-height shrubs are probably the most useful. They blend lawns to buildings, border lawns, enclose gardens, and back minor structural features. When winter comes, their greenery is probably the most missed of all summer landscape elements.

Dwarf evergreens are beginning to be more used, both by professional designer and amateur, to take the place of and relieve leaf-bare winter shrub masses. They do much to compensate for the loss of the green leaves on shrubs when autumn strips deciduous foliage.

For the most part, the dwarf evergreens can be planted and used much as are the deciduous shrubs. For massing near the house foundations they are ideal. For borders there are evergreens which, in groupings, will carry right through the winter the mass effect that shrubs give in the summer. These are in fact year-round effects, being green both winter and summer.

But there is another point to consider when the designer plans to use many dwarf evergreens. Their unchanging countenance does not give the variety offered by the varying garb of the deciduous things. To have a home grounds or other designed landscape present exactly the same effect throughout the year, never changing with seasons, never deviating from a fixed formation, may bring a very definite monotony.

Naked twigs of deciduous shrubs will give the relief for too heavy massing of dwarf evergreens. Still better would be a planting in which the evergreen shrubs are made to combine in bright color contrast with the red-barked and golden dogwoods. Some of the roses with bright bark and big red hips make good contrast to heavy, compact evergreens, while the snowberry, Indian currant and Jap barberry give the bright contrast of berries as color relief in addition to that lightness of twig lacery which is characteristic of these shrubs in winter seasons.

Specifically there are three general ways dwarf evergreens may be used in landscape plantings around the home grounds. They may be used as single specimens to relieve a heavy planting of deciduous shrubs. For example, the Western red cedar (*Juniperus scopulorum*), can be used to good effect as an accent point, near the corner of a house,



Photograph by Irving W. Payne

An inviting entrance. This garden gate has been flanked on each side with English Ivy, used as a ground cover. Within the garden is a clump of Common Box, with Bigleaf Wintercreeper on the balustrade near the right post

Evergreens

Ornamental Planting

HUR I. CARHART

in a grouping containing bridal wreath (*Spirea v. h.*), Jap barberry (*Berberis thunbergi*), and perhaps a Persian lilac (*Syringa persica*). During summer its spiky top will give the little perky touch which will relieve the softer, rounder outlines of the shrubs. In winter the cedar will stand out boldly as the pivot on which the whole winter grouping will center.

While Western red cedar grows rather slowly and never becomes larger than fifteen to twenty-five feet, it will serve in a location near a structure only over a limited time. Trimming will hold it back for some time, but eventually it will have to be moved from too near the house, because of growth.

Other spiky evergreens have much the same effect. The common red cedar (*Juniperus virginiana*), and its variation, known as the Platte River type because of faster growth, will serve for a lesser period than the Western red cedar. Or plant a Colorado Blue Spruce (*Picea pungens*), in such a location. The difficulty in doing this is that when the tree gets large few people have the heart to try to move it out and replace it with a younger tree. Nearly all needle tree evergreens while young will serve well when used as dwarf evergreens, but if they are so used a real determination to move them when the time comes will have to be set up and



A mixed planting of deciduous and evergreen stock was used here with fine effect. The cedar at the corner gives good accent, even in the winter



Photograph by Irving W. Payne

The famous Rhododendron Walk in Highland Park, Rochester, where dwarf rhododendrons and azaleas are used as "facers" to the taller plants. Conifers in the background accentuate the beauty of the general landscape effect

maintained. In general it may be said that the Western red cedar is about on the borderline of the dwarf group. It is halfway between a tree and the positively dwarf evergreens. It may be used in either large shrub border or in a grouping composed of mixed shrubs and evergreens permanently or as a semi-permanent planting, in a location where a smaller, spiky tree is needed.

The first principal use of dwarf and semi-dwarf evergreens is for the purpose of accent, both in summer and winter, their form being a principal factor in this use.

A second way in which smaller evergreens may be used is in groupings as a part of a general foundation planting, or shrubby border. Here, for general mass, we would use such plants as the little dwarf mugho pine (*Pinus montana mugho*), the larger dwarf mountain pine (*Pinus montana*), which grows to eight or ten feet high when very old, Pfitzer's juniper (*Juniperus pfitzeriana*), and



A bit of landscape to which the Truedwarf Box hedge, crowding the path, adds beauty and charm

And here, in one of the world's most famous gardens, that of Washington, at Mount Vernon, we find Truedwarf Box in trim order, but winding a devious way



Photograph by Irving W. Payne

grade off in front with the more prostrate evergreens. These lower growers which should go in front of the higher mass and which form the group of evergreens comparable in size, form and location in the border to such low shrubs as barberry and snowberry, include the Waukeegan juniper (*Juniperus horizontalis*), the ground juniper (*Juniperus communis*), the prostrate ground juniper (*Juniperus communis prostrata*), and Savin's juniper (*Juniperus sabina*).

There are many variations of these dwarfs. One has foliage like cypress, being a variety of the Savin's juniper. Another is creeping; a third is silvery. There are even globose forms of the junipers which can be used in formal

plantings. The varieties offer a great selection of form, texture, and color.

Where humidity and temperature permit, an arbor vitae can be used in the evergreen shrub-like plantings. Its range extends northeastward into the lake states country, and embraces most of the eastern states.

The yews are other very good evergreens, among which are varieties having bush forms. They are found in the Pacific northwest, and thrive in the south-central and Atlantic seaboard states.

But the most universally hardy group of all centers around the mugho pine and the dwarf junipers. These are the ones which everywhere will make the backbone of the shrub type of dwarf evergreen plantings.

The second field of usefulness is where masses of shrub-

shaped evergreens are used with deciduous shrubs, as shrub masses. The higher plants will be the dwarf pines and Pfitzer's juniper, the mid-sized will be represented by the varieties of Savin's juniper and the ground juniper, relieved where possible by the smaller arbor vitae, while the edging of the shrub group will be made up mostly of prostrate forms of the juniper.

The first use of dwarf evergreens is as a single specimen, an accent point in a shrub border. The second as a shrub mass, in a border at base of house, or in the yard borders. The third is the use of such a group composed entirely of evergreens. Evergreens so used are likely to become heavy and rather "blobby," particularly if globose forms are planted

in excess. As a general rule one should not plant a purely evergreen border of any considerable size. An exclusively evergreen border of only a score or less of plants, used as a backing of small structural features or as the border at the end of some lawn-covered panel, will not become too heavy. But a solid, informal planting of dwarf evergreens for a distance of several hundred feet would certainly become heavy and "pudgy." So, while the third place to use dwarf evergreens is in pure evergreen plantings, such plantings must be handled in the finest of taste or they become heavy and unlovely.

One of the finest qualities in this group of dwarf evergreens is the variety of texture, color and form which may be used. Color ranges from dark green to silver. The form ranges from types that creep along the ground to trees which are almost columns. The texture ranges from the broad, flat-leaf clusters

of the arbor vitæ to the fluffiest, plummy fronds of some of the junipers.

We have touched on what and where to plant. Now consider some points on how to plant.

Nearly all of these plants will be secured from commercial nurseries. When dug from native habitat they are not so well formed as when bought from nurserymen. As dug from a nursery row they should be balled and burlapped. When received, the ball of earth around the roots should not

be broken loose from the roots. Plant without removing the burlap, cutting away excess cloth only after the plant is nearly filled around the roots with earth. Water in soon after planting.

By far the safest time to plant evergreens is when there is a frozen ball to be had. Then the tree can be dug, allowed to remain in place, the ball packed about with litter until freezing

(Continued on page 172)



Photograph by Furman Lloyd Mulford

Low evergreen hedges, lining the sweeping approach, and tall dark evergreens against the gleaming marble, make of this formal setting a thing to be long remembered, while below a delightfully inviting and intimate feeling is created by the varied use of familiar plants framing the doorway. It speaks a welcome—"East or West—home's best"



EDITORIAL

Hi-Jacking the National Forests

LOCAL frenzy for the creation of National Parks in the Southern States has broken out anew in Congress. It has manifested itself in a form which calls for the best fighting spirit of those who would preserve the present independent integrity of the National Forests and the National Parks. It raises an issue of whether these two national institutions are to be scrambled in the same frying pan or maintained and developed as separate systems, each with clearly defined and nationally accepted objectives.

On February 2nd the Public Lands Committee of the House held a hearing on Representative Wingo's bill (H. R. 5729), which would take some 128,000 acres from the Ouachita National Forest in Arkansas and invest it with the title and status of a National Park. Short notice of the hearing was given. A strong delegation from Arkansas, headed by the Governor of the State and well prepared with arguments, was on hand. The Committee gave the Arkansans courteous treatment and ample time to present their case. In significant contrast was the Committee's attitude towards those who, learning of the hearing the evening before, appeared to present objections to the passage of the bill. Only William B. Greeley, Chief of the Forest Service, and Arno B. Cammerer, Assistant Director of the National Park Service, who had signed a joint report recommending against passage of the bill, were permitted to be heard. They were subjected to grilling cross-examinations, heckled and challenged by Mr. Wingo and certain members of the Committee for opposing the legislation. Other opponents of the bill were denied a hearing, but were informed they could submit written objections later. The whole hearing gave the impression that political skids had been well greased for the bill to slip through the Committee with a strong and favorable report.

The spectacle of the House Public Lands Committee openly favoring a bill which would establish a precedent for Congress to loot the National Forests in order to hand out so-called National Parks as political pork to state and local communities, inflamed by exaggerated ideas of their advertising values, is a danger signal of the first magnitude. War must be declared on the Wingo Bill. Back of it are a number of similar bills awaiting the opened door. Behind them are yearning groups throughout the south and

east on edge for their share of national advertising, when it becomes apparent that the Congressional way is open. Ten years of the hardest sort of work were required to secure the passage of the Weeks Act under which the Federal Government for the past seventeen years has slowly been acquiring National Forests in the east. This act specifies with undoubtable clearness that the lands bought by the Government are for stream protection and timber growing and Congress has long been committed to that proposition. The proposal now to take these hard-earned Federal Forests and to divert them into National Parks would seem to be an emasculation of the law that amounts to nothing short of hi-jacking.

From the standpoint of our National Park system, Representative Wingo's bill is equally dangerous. The area which it would take from the Ouachita National Forest does not measure up to National Park standards which have made the system great, outstanding and distinctive. Neither Secretary Work nor the National Park Service desires it. It would embarrass the system by its very inferiority. They oppose it because it would be the entering wedge to destroy the majesty of our National Parks by making of them a hodge-podge of commonplace scenery. Mr. Wingo and the supporters of his bill apparently give little weight to these basic considerations. "What difference," Mr. Wingo asked, "whether the Park Service or the Forest Service administers this region? It is national property anyway."

Shallow though this reasoning is, its persuasiveness in a session preceding general elections, when every Congressman fears making enemies, is apparent. At such times many an innocent looking bill passes laden with unforeseen and fateful consequences. Once we kneel before the political altar of carving up the National Forests to make inferior National Parks, two of the greatest conservation achievements of the American people are doomed to totter.

The issue demands that National Park standards be maintained. In the face of the Wingo Bill and its kind, it is the only way to preserve the National Forests. Abolish park standards and the Nation shall lose not only the integrity and efficiency of its forest system, but the grandeur and distinctiveness of its park system. The two stand or fall together.

A New Grazing Bill

AMONG the half dozen or more grazing bills which have been introduced in the present session of Congress, Senate Bill 1969 appears to be the spotted calf. It has at least caught the public eye of inquiry. Numerous requests for information as to the sponsors of the bill and as to whether or not it is the forerunner of another controversy centering around grazing on the National Forests have been received by the Association. The sponsors of the bill have not yet openly declared themselves. The measure was introduced by Senator Smoot. So far as can be learned, however, the bill has not been formally endorsed by the live stock organizations, so at the present time it appears to be more or less an orphan on the congressional range.

The bill itself may well be questioned in that it contains a number of objectionable provisions. One section of it would have the effect of perpetuating preference rights to grazing on the National Forests and depriving the Secretary of Agriculture of the free authority which he should have in making grazing awards to promote the best public interests. Another controversial feature of the bill is its provision that grazing contracts shall entitle the holders thereof to the full grazing use of a specified or described area of land. Question may well be raised as to the interpretation of "full grazing use." If it is to be interpreted as complete grazing use it would be an exceedingly dangerous grant and one certain to give rise to interminable controversies.

The most objectionable feature of the bill, however, is a

section which places in the hands of a grazing board power to determine grazing fees and specifies the basis upon which fees are to be determined. This provision would virtually rob the Secretary of Agriculture of the authority he now has to determine the prices at which forage from the National Forests shall be sold. Not only would this power be delegated to the grazing board, but the board itself would, under the wording of the bill, be compelled to arrive at grazing fees by calculations based upon the prices of live stock in Omaha, Chicago and Kansas City markets. This basis, we think, would work injustices, both to the government and the grazing users, because market prices of beef and mutton are not true barometers of the value of range forage. The provision appears to be a clever attempt to controvert the sliding scale of increased grazing fees which the Secretary inaugurated in January, 1927.

Taken as a whole the measure is too defective and controversial to gather any substantial support. It is significant that both the National Wool Growers' Association and the American National Livestock Association at annual meetings held last month at Ogden and El Paso, respectively, failed to endorse the bill. This would indicate that it is a controversial measure even among the grazers themselves, and that its opponents are greater in number than its supporters. Lacking support from these two national organizations there seems little chance of the bill making any substantial progress in the present session of Congress.

The Ranger Correspondence Schools

RECENTLY, in a number of magazines with national circulation there have appeared advertisements with extended and alluring solicitations to become a forest ranger by the purchase and pursuit of a correspondence course of study. During the same time, in many of our western states, where the administration of the forests is more than a romantic pastime, the United States Forest Service reports that never before in the history of the department have so many men appeared before Civil Service examiners to qualify for the ranger position.

The greater part of their number came laden with excerpts from government forestry pamphlets and paid up receipts from any one of a half dozen ranger correspondence schools. Many of them had journeyed thousands of miles for the occasion, confident that they possessed the qualifications of a regular forest monarch, and produced certificates to prove it; but aside from that, Civil Service records show that sixty per cent of these applicants were utterly ignorant of the fundamental requirements of either the examination or the job, and were excluded from the examination on the grounds of ineligibility. With the exception of a few technical phrases and a casual acquaintance with the duties of a ranger, they were but slightly informed on the first principles of rangering. There were young ones and old ones, thin

ones and fat ones, all eager to become "watchdogs of the forests," where they could fish, hunt, trap and camp under Nature's grateful shade as promised by their own particular correspondence school.

These schools have painstakingly and successfully dodged the question of eligibility. They make no mention of the requirement of the government that forest rangers must, when practicable, be appointed from the State in which a vacancy occurs. Another thing, the schools do not advertise that men under twenty-one years of age or over thirty-four years are ineligible for the ranger position. Nor is there any evidence that the applicant is told that a ranger must furnish his own equipment and means of travel, which ordinarily involves an outlay of several hundred dollars.

Foresters are not unsympathetic with the pursuit of a correspondence course of study for rangers and those interested in the administration of our forests, providing institutions and individuals are sincere in their purpose and offer plausible and practicable aid. The value of this method of study has been proven time and again when it is faithfully followed and applied. But when the young men of the country are victimized by misleading advertising, pretending to equip the average man for the ranger's badge, it is time for a little well-directed action.

FOREST

PEOPLE



Bauer--Grower of

Lilies in the Oregon Woods--By Ethel Romig Fuller

IT is high noon at the Bauer Aquatic Gardens, in the Willamette Valley, Oregon. The lovely natural lake, six acres of limpid, black water, framed in the soft gray-greens of alder, ash and willow, is starred with wide-eyed *Nymphaeas*—not only the familiar white-petaled varieties, but hybrids from the Orient and the tropics as well; pale luscious pinks, carmines, Chinese reds, yellows, apricots, and here and there a lilac-hued lily, or an even more rare, delicate blue bloom.

There is a subtle fragrance in the air. Dragonflies shimmer in the golden light; bees drone by with their burdens of pilfered sweets; a blue heron stands somnolently in the reeds; a turtle climbs out on an old log to sun himself; the lily pads are continually agitated by the myriad water life beneath them.

This garden, one of the beauty spots of the state, located in a rich farming district about forty miles from Portland, is the property of Fred Bauer, Jr., a contractor and builder

of that city. It is unique, not only for sheer breath-taking loveliness, but because of the fact that it is the only large garden of its kind in the Pacific Northwest.

The record number of marketed blooms from the lake is 75,000 in one season, cuttings that do not include many other dozens given or thrown away. But the flowers themselves are but a small part of the

enterprise, which includes a wholesale and retail business in root-stock. Mr. Bauer not only has a local market for his plants, but a clientele extending throughout the country.

The transformation of this forgotten bit of "school land" is a fascinating story.

"Seven years ago," Mr. Bauer relates, "we accidentally heard that this twenty-five-acre tract was for sale. As for

some time we had been on the lookout for a site for a summer home, we investigated and found it ideal for our purposes. It was accessible to, but not directly on a highway; there was a splendid stand of timber—fir, cedar, maple and oak on the higher ground; alder, willow, and some of the



Photograph by Kiser

The Bauer boys, Rex and John, are growing up with the business. They are out after choice blooms and are filling their boat with beauty

finest specimens of ash I had ever seen in the lowlands. Then there was a lake fed by springs and stocked plentifully with bass and croppies.

"After gaining possession, we cleared land for a cabin, but neither then nor since have we cut down a tree unnecessarily. They constitute one of the greatest charms of the place. The cabin built, we turned our energies toward beautifying the lake, clearing out the underbrush from the shore line, and trimming the trees.

"Then, as an experiment, we sent east for some hardy, white water-lily tubers (*N. Marliacea albida*), which we planted in the rich muck bottom of the lake, where they

problems which called for painstaking study and solution.

At the beginning of the third summer there was such a profusion of lilies on the lake that Mr. Bauer decided to market his surplus. To his great surprise, he found there was no market in the West for water lilies. Not a florist in Portland would consider them. This put the grower on his mettle and he decided to try to create a demand for his produce. And this he accomplished after two years of unremitting effort—arranging window displays, furnishing free floral decorations for all kinds of public functions, by making funeral sprays, and by keeping fresh bowls of his choicest blooms in hotel lobbies.



Photograph by Kiser

The lovely, natural lake is the heart of the Bauer Aquatic Gardens. There are six acres of limpid, black water, framed in the soft gray-greens of alder, ash, and willow trees, starred with wide-eyed blossoms. Here in the undisturbed serenity of the woodlands is indeed a "rendezvous of peace"

flourished prodigiously. The second year we tried other varieties with equal success. Probably no one was more surprised than ourselves at the consequences. This past summer we shipped over 3,000 tubers of the *Marliacea* back to the grower in New Jersey who supplied us with the original plants."

For the growing of water lilies, the Bauers had no precedence to follow. Indeed, they have pioneered the industry in the West, where there are no native *Nymphaeas* except the common yellow spatterdock, or Wapato. Each step was an adventure, and every season brought many new

At the present time, almost every florist in and about Portland features Mr. Bauer's water lilies. There is such a demand for the fragrant blooms that the Gardens can scarcely meet the orders.

Likewise, with the growing popularity of rock gardens, which are not complete without their lily pools, Mr. Bauer finds not only a local market for tubers, but constant requests for advice in the planting of the pools.

Each year the Bauers have added new varieties to their original stock, setting out the tubers in the spring and lifting and transplanting them in the fall. Mr. Bauer has

(Continued on page 180)

European Tour Arouses International Interest

Members of the American Forestry Association Making European Tour Will Be Heartily and Enthusiastically Received Abroad

FORESTERS, conservationists and others vitally interested in forests, parks and outdoor life, of both America and Europe, have been aroused by The American Forestry Association's European Tour. The party will sail from New York on the *S. S. Stockholm*, June 30, 1928. Since the announcement in the January issue of *AMERICAN FORESTS AND FOREST LIFE* of the two-month trip to the most famous and picturesque forests of the Old World, the foremost leaders of forestry and outdoor life of the two continents have been stimulated, and their enthusiasm bids fair to make the trip one of the outstanding events in the annals of forestry.

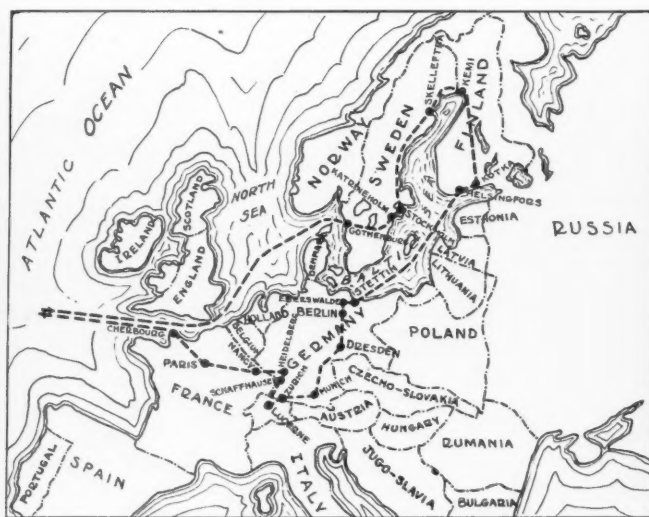
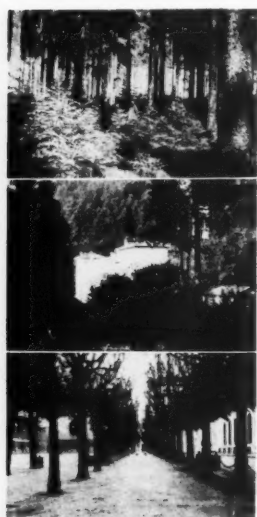
From Europe comes eager voices of appreciation and praise for this opportunity to exchange ideas with American forest thinking people. From every country included in the itinerary there has come enthusiastic offers to cooperate with the Association in making the tour highly educational and instructive as well as entertaining. Chief Inspector F. Aminoff, of the Swedish Forestry Service, and one of the notable leaders of forestry abroad, promises to welcome the Americans in Sweden and conduct them through the picturesque forest areas of his country. Another Swedish forester of note, Inspector Elgstrand, of the Swedish Forestry Service, has voiced praise for the tour and will accompany the party through the northern forests.

In Finland, Dr. A. K. Cajander, Chief of the Finnish Forestry Service, promises to make the eight-day stay in Finland one of the most interesting and instructive of the

whole tour. Dr. Cajander is well known as an authority on the forests of the Old World and has written much about them. Officials of the A. B. Gutzeit Company, near Enso, have offered to open their great forest products laboratories to the touring party. The Finnish Forestry Association will give the Americans an enthusiastic welcome at Helsingfors. The governments of Germany and Switzerland, through members of their forestry departments and associations, are planning a fitting reception.

Inspector August Oudin, professor of Forest Research at the National Forestry School of France, at Nancy, has invited the party to the famous institution, established more than a hundred years ago. At Paris, the most fascinating city in Europe, Chief Inspector Jagerschmidt, of the French Forestry Service, has offered to lead the Americans into the world-famous forests of Fontainebleau. He will also accompany them to the hardwood forests at Blois. Inspector Galland, also of the French Forestry Service, will conduct the touring party through the silver fir mountain forests at St. Die, where great war cuttings were made by German soldiers during the World War.

In America, too, great interest and enthusiasm over the Association's European Tour has been manifested. Leaders of American forestry have voiced whole-hearted approval of the tour. A descriptive booklet has been prepared setting forth in detail the many excellent features of the tour and the optional extensions. This may be obtained by writing The American Forestry Assn., Lenox Bldg., Washington, D. C.



Arriving at Gothenburg, Sweden, those making the Association's European Tour will start on one of the most fascinating adventures in foreign travel ever made available to the American public. In Sweden and Finland the party will traverse the great forests of pine, spruce and birch. Then across the Baltic Sea to Germany and the Black Forest; into Switzerland and famed Lucerne. In France they will visit the Forest of Fontainebleau and Paris.

Through the Field Glass

Timely Comment on Important Developments in Forestry

By SHIRLEY W. ALLEN

FORESTRY on a commercial scale in this country, whether it be practiced by a municipality, a farmer with timber or idle acreage, a railroad, a paper company or a lumber company, will speed up when fire insurance can be secured to protect the investment.

The United States is not entirely without forest fire insurance experience. At least three American companies have written such insurance, although none of them has been in the field aggressively. In 1917 the Timber Lands Mutual Fire Insurance Company was incorporated in New Hampshire for the purpose of dealing in standing timber insurance. At the end of two years the company turned over about \$400,000 of insurance to the Globe and Rutgers Fire Insurance Company. This covered pine, fir, and spruce in Maine, New Hampshire, and Vermont. Risks were well scattered and the individual limits were low. Not much of this business is now in existence, but forest fire insurance cannot be said to have been given anything like a fair trial in this country. The nearest approach to it, on a large scale, is the insuring of felled timber on the Pacific coast. This type of insurance is handled by a pool involving a large number of companies.

At the recent commercial forestry conference held in Chicago under the leadership of the Chamber of Commerce of the United States, a committee on forest fire insurance made an interesting report which sought to show the extent to which timberland owners wanted insurance on standing timber or young second growth. The committee included five timberland owners and five insurance representatives. Their report cited the experience of the Western Forestry and Conservation Association, a group of organized timberland owners in the northwest. This association recently sent out questionnaires to its membership to discover what they thought about forest fire insurance. About sixty replies were received which contained useful information. Those interested represented 800,000 acres of timber with a valuation of about \$54,000,000. The holdings represented are well distributed over five states and include the main commercial species of the northwest.

One feature of the canvass which is significant is the interest of five companies in securing insurance on cut-over land in California, Oregon, and Washington, totaling 111,000 acres. Simply holding and protecting such lands on the fair chance that they will reforest naturally involves the laying out of carrying charges which can be justified only if the areas are protected. Doubtless the ability to get insurance reasonably would stimulate this means of reforestation and also encourage any tree planting necessary.

Any company seeking to write forest fire insurance at this

time would have to charge a somewhat ruinous premium unless more information were available to it than now exists. But there is no reason why that information should not be obtained and made available promptly. It would be necessary, for instance, as was suggested in the Commercial Forestry Conference Committee's report, to know how fires were caused—not by actual number of fires, but by number of fires causing greatest damage; what precautions were taken by the insured to abate them; what effect fire had on the tract involved and on surrounding tracts, and what laws could be invoked to discourage forest fires. The cooperation of timberland owners, insurance companies, state and federal governments and trade associations will yield the answers to these questions.

The Commercial Forestry Conference Committee can not do better than to see that such studies are made and prosecuted with sufficient vigor to complete them in one or two regions within one year. The committee believes that private agencies should carry out the study, perhaps because they do not like the traditional conservatism of federal agencies, nor the delay which is often incident to their efforts. The Federal Government, however, is well equipped to gather statistics, to analyze them, and to give to timberland owners a service similar to that which the Department of Agriculture has given in the study of rural insurance. There is plenty of precedent for financing a federal study of insurance. It will be speeded up of course, if the cooperation of private interests is given, and if financial contribution is made by private interests. Certainly, with good direction and a large skilled force, one or two regional studies can be completed within a year.

Strangely enough, the Chicago committee took no note of foreign experience in forest fire insurance, in spite of the fact that timber insurance has been in force for many years in the Scandinavian countries.

"Insurance," declares John L. Kaul, Chairman of the Commercial Forestry Conference Committee, "is the keynote of America's credit structure in practically every field of endeavor, and therefore if credit is to be extended to timberland owners, it is only logical to presume that the banks of the country will desire the security which arises from complete insurance protection."

Surely, with the urge for commercial forestry on the present holdings of large companies, and with the beginning of private investment in the business of reforesting idle lands, the necessary studies will be made, and timber growing as an investment will, in time, be sufficiently secured to go forward as do other enterprises.

Snapshots of European Forests

By An American Forester



III. The Black Forest of Germany

By JOHN D. GUTHRIE

THOUGH everyone has heard of the famous Schwarzwald of Germany, it is most impressive if one is fortunate enough to enter it at night, as I did. About twelve o'clock we came in, whizzing along fine roads through tall aisles of dark spruce, recalling old legends of gnomes, of forest giants, of knights and their ladies. We were driven in a big autobus leaving Baden-Ös at eleven, then some twelve miles to a forest tavern high in the forest. "Kur-Sand" was our tavern, a health resort, a delightful place with a real forest flavor. The dining room walls were lined with trophies of the chase, deer and boar heads, grouse, black-cock, and beaver.

The next morning I walked around outside to look the place over. Here came the first surprise as contrasted with our forest resorts. This *kur-haus* — and there were many in the Black Forest — had no glaring signs of the name of the hotel. There was no countless array of signs of gasoline brands, motor oils, greases, breads, ice creams, candies, or cigars plastered on every available wall or tree. There were no signs at all anywhere to be seen, and yet practically all of the above commodities were to be had at this and every other *kur-haus* in this region. Why do not these foreign proprietors shriek to the traveling world that these things are for sale? Probably they realize that their guests do not like such glaring signs, or else the proprietors themselves have too much good taste to ruin in this way the rustic effect of their places. The architecture of

these resorts fitted into the setting, the exterior and the interior bore the forest flavor, all appealing tremendously to the city dweller who would naturally love to come to such a place to escape all the signs, sounds and smells of the city.

It rained most of the time that we were in the Black Forest—it usually does, they say. While there we met several *forstmeisters* and an *oberforstmeister*, and saw a lot of *forsters*. Here was a picture forest, and here were picture foresters—green uniforms, canes, heavy hobbled shoes, green felt hats with badger-brushes (reminding us unromantic Americans of inverted shaving brushes!)

stuck in the hatband behind, and of course an inevitable bench-legged *dachshund* or two.

Here were pure spruce stands, even-aged, as regularly spaced as an orchard, Scots pine, mixed with fir and spruce forests, beech and spruce forests, but mostly pure spruce forests.

The deer eat the beech and the fir seedlings and so these species are not popular here, though the foresters admit, now at last, that pure, even-aged spruce stands are not desirable, neither as good revenue producers nor as improv-

ing the soil; in fact, are a great detriment eventually to the forest soil. Get rid of the deer? Oh, no—never. Game is so interwoven with forest management in Germany (as well as in some other European countries) that such a suggestion is nothing short of heresy. Game propagation and management are a part of the European forester's job, while the American forester knows little about game except, perhaps,



Thinning for pulpwood in a woods operation in the Black Forest of Germany

how to shoot it. Several deer stands were seen in the Black Forest, erected for the use of former royalties. One foolish American asked if these stands were fire lookout towers—which they did resemble—but was solemnly told they were deer stands or towers from which fine deer shooting could be had.

For the time we were in the Schwartzwald and in spite of the early season (it was early May), a very large number of hikers—young folks, old folks, middle-aged folks—in twos, in threes, in larger groups, each with the accustomed *rucksack* on the back, generally a cane, in woods clothes, were out in the forest enjoying it. The German seems to have an innate love for forest hiking; I saw more of it in German forests than elsewhere in Europe.

There were roads and many excellent trails. And here I was greatly impressed with the simple and sensible trail-marking system used in this forest. Instead of disfiguring their trees by blazing, or nailing up unsightly signboards, they scraped off the outer loose bark and painted a spot some six inches square on an occasional tree along the trail. These spots could be plainly seen, and I was told that the color lasted well. There were certain trail trips, known by the color of the trail-markers; for example, I saw a "Red Trail Trip," a "Blue Trail Trip," and others. Some of the trips overlapped for portions of their routes and two or more differently colored spots were on the same tree. These "colored" trips were shown on the forest maps and so could be readily followed on the ground by the hiker. I had to admit this system was a vast improvement on ours, when usually the bark and also the cambium are injured and an unsightly scar made; and then, when the trail is straightened or changed, we may have scattered blazes all along a trail, or indiscriminately through the

woods, which are natural openings for insect, fungus and fire. This spoils the chance for the development of woods-sense by following forest trails, and the Germans realize this and guard against it.

There was some cutting going on in the various forest types. Logs were being peeled in the woods, being skidded down hill to roads, pulpwood being cut, charcoal pits being laid up for firing. There were woods-workers' homes, little villages made up of woods-workers, sawmills, and other plants, on the edges of the forest or in the small open valleys. There were some large water-power plants being put in, big works, employing some 3,000 men. There is many a *kur-haus*, or health resort in the Black Forest, and also many



One of the attractive rustic shelters for campers and hikers found throughout the Black Forest

lodges, or club houses. These are on privately owned land, title having been acquired from the large company, a log-driving association of many years standing which owns some 12,500 acres of the forest, and this is picked forest with no unproductive land. The story of this company, or guild, or union, *Schifferschaft*, dates back to the fourteenth century and is an interesting one in itself. It seems that the Counts of Eberstein were the original owners of the Schwartzwald.

They had to have money however to carry on their many petty wars. The river-drivers, or *Schifferschaft*, were an ancient guild, and they had been taking fine spruce logs from the Black Forest down the Rhine to Holland and the Low Countries for many generations, for the Dutch ship-builders would have no other



Two German Forstmeisters. Picture foresters in a picture forest, proudly and completely outfitted for the job from their green felt hats to their heavy hob-nailed boots, not to mention the canes and smiles!

wood but this spruce from the Schwartzwald. The river-drivers therefore had much money, and they lent it to the Counts to carry on war, wisely however taking mortgages on the Black Forest. Finally the Counts could no longer pay, and so the *Schifferschaft* took over the Schwartzwald, being later

(Continued on page 178)

Chief Forester Greeley Resigns

Will Leave Forest Service May 1 to Become Associated With West Coast Lumber Association—R. Y. Stuart to Succeed Him

COLONEL WILLIAM B. GREELEY, for ten years Chief of the Forest Service, United States Department of Agriculture, will resign May 1, 1928, to accept a position with the West Coast Lumber Manufacturers Association. Major R. Y. Stuart, now Assistant Forester, in charge of Public Relations, has been appointed to succeed Colonel Greeley.

This announcement was made on February 20 by Secretary of Agriculture William M. Jardine. "It would be impossible to overstate the high character of the service that has been rendered by Colonel Greeley to the welfare of the American people," said Secretary Jardine in accepting Colonel Greeley's resignation. "He has been a wise and careful, but a fearless and vigorous administrator and leader. His public service has been continuous over a period of more than twenty-three years, his entire working life up to the present time. He has risen because of his outstanding ability and competent performance from a beginner's place to the head of the organization which administers more than 150,000,000 acres of Federal land, and during his eight years as chief of the Forest Service he has uniformly commanded the respect of his subordinates, enjoyed the confidence of those over him, and won unreserved approval from the public as a constructive, well-balanced, eminently fair and always far-sighted counselor and maker of policies. His record during the World War as organizer, leader, and administrator was likewise notable, but it is first of all as director of the forest work of this department and the leader of the general forestry movement of the country during a period that has presented many problems of exceptional difficulty that he has made a permanent place for himself in the public esteem and in history."

Colonel Greeley entered the Forest Service in 1904 as forest inspector on the Sequoia National Forest, in southern California. In 1908 he was called to Washington to become Assistant Chief of the Division of Management, and later was appointed District Forester at Missoula, Montana. Three years later he was again called to Washington to supervise timber sales, timber and fire trespass cases, reforestation, and cooperative work with States and private owners in promoting fire protection.

During the World War Colonel Greeley was asked to take charge of the recruiting of forestry troops for the American Expeditionary Forces, and later was sent to France. Early in 1918 he became chief of the forestry section of the A. E. F. After the war he returned to the Forest Service to take charge of the branch of forest management. With the resignation of Colonel Henry S. Graves as Chief Forester, in 1920, he was appointed to succeed him.

Major Stuart, who will become the new Chief of the Forest Service, has, like Colonel Greeley, had a wide range of forestry experience and education. He first came to the department in 1906, direct from the Yale Forestry School where he had received an M. F. degree. In 1917 he was furloughed for military service in France with the 10th Engineers. After the war he returned to the Forest Service but resigned in 1920 to become Deputy Commissioner of Forestry in Pennsylvania. He later served for several years as secretary of the Pennsylvania Department of Waters and Forests. On February 16, 1927, he was again called to the United States Forest Service to assume his present position.

Dwarf Evergreens in the Landscape

(Continued from page 163)

weather comes, and then by taking off the litter the ball can be frozen and lifted without cracking. If the place where the tree is to be planted is likewise protected by barnyard litter, the hole to receive the tree can be dug in the unfrozen ground, the frozen ball of earth containing the evergreen roots properly set in the new location, and then the entire mass of frozen earth can be watered in. When evergreens are received from the nursery, do not lift them by their "necks" (the stem of the plant under the branches and above the earth ball). This is practically fatal. The idea that evergreens, just because they are evergreen and the symbol of life eternal, are hardy is not well founded. They are among the more particular plants when moved.

Air at the roots cause the loss of evergreens of all types. Keep the roots moist while transplanting.

It is not necessary to think of the garden as having only one main season of beauty. There may be just as much beauty in a winter garden as in the height of summer bloom. It is of a different sort. And to get it one must plan for a year-round garden. In such a garden there must be evergreens. Of the entire group of evergreens, just as in the deciduous types of plants, the shrub-like needle evergreens fill one of the greatest places in plantings. As accent, as winter greenery, as entire solid dwarf evergreen plantings where year-long screening and massing effect is needed, they stand without substitute.

Resolutions Adopted at Annual Meeting

RECOGNITION that proper management of forest lands is essential to flood control plans for the Mississippi Valley, endorsement of the McNary-Woodruff and the McSweeney-McNary Bills, and protest against the proposed establishment of the Ouachita National Park, in Arkansas, were among the outstanding resolutions adopted by The American Forestry Association during the annual meeting at St. Louis, February 17 and 18.

The outstanding resolutions read as follows:

1. The American Forestry Association recognizes that flood control in the Mississippi Valley is a national problem of the utmost importance and urgency. It believes that the Federal Government should assume direct responsibility for the solution of this problem in all its phases, and that this solution must include, in addition to engineering works, the proper management of agricultural and forest lands. It therefore urges that this point of view be represented in the composition of the Mississippi River Commission, and that Congress make prompt and liberal provision for carrying out the recommendations of the Forest Service for the handling of forest lands in the Mississippi Valley.

2. The American Forestry Association believes that the prompt and thorough working out of the many difficult problems in timber growing, economical utilization of mature timber and profitable use of idle land rest upon continuous forest research adequately provided for by the Federal Government. Such a program would be authorized in the proposed organic forest research act known as the McSweeney-McNary Bill (H. R.-6091 and S.-1183), which constitutes one of a series of basic acts outlining a comprehensive national forestry policy. The Association therefore urges favorable action by Congress on the McSweeney-McNary Bill, and requests the officers and members of the Association to use every effort to insure its early passage.

3. The American Forestry Association recognizes that the practice of timber-growing by private owners is a business which is entitled not only to sympathetic consideration from the public, but to specific encouragement in the form of equitable taxation and of public participation in fire prevention and suppression. The Association expresses its congratulations to those private owners who have already undertaken the practice of forestry on their own lands, renews its pledge to attempt to secure public support of and assistance in the movement, and urges private owners generally to expand their work of reforestation and sound timberland management.

The Association also went on record as opposed to the establishment of the Ouachita National Forest, Arkansas, chiefly because the proposal conflicts with the policies consistently followed in the establishment of National Parks.

Other resolutions adopted called for the expansion of forest planting, chiefly by the Federal Government, and extensive soil studies which will lead to more effective use of land resources. The Association, through resolutions, congratulated Missouri, Florida and South Carolina for their recent forestry activities. The concluding resolution thanked the Missouri Forestry Association, the International Order of Hoo-Hoo, the St. Louis Hoo-Hoo Club, the St. Louis Convention Bureau, and the Missouri State Federation of Women's Clubs for their effective cooperation and cordial hospitality, to which the success of the meeting was largely due.

FINANCIAL STATEMENT

There is printed below the annual financial statement of the American Forestry Association for the year ended December 31, 1927. This statement is published for the information of the members of the Association and in accordance with Section Three, Article Five, of the By-Laws. The statement, audited by Rankin and Company of New York, shows the Association to be in the soundest financial condition of its entire history. Operating expenses during 1927 were kept well within the operating income and, in addition, an endowment fund of \$241,456.63 was created. This fund will be further increased by the payment of outstanding pledges aggregating \$2,670.00, making the total endowment amount to \$244,126.63.

THE AMERICAN FORESTRY ASSOCIATION

WASHINGTON, D. C.

Balance Sheet as at December 31, 1927

ASSETS		LIABILITIES AND CAPITAL	
Cash	\$9,636.62	Accounts Payable	\$1,648.95
Endowment Fund	241,456.63	Reserves:	
Accounts and Notes Receivable	3,737.49	Prepaid Memberships	\$24,496.91
Inventories	4,836.72	Florida Educational Project	200.00
Interest Accrued on Investments and Pledges	5,956.43	Forester's Office	333.33
Furniture and Fixtures	3,783.45	Forest Fire Educational Project	2,187.66
Deferred Charges	655.92		27,217.90
		Surplus	241,196.41
	\$270,063.26		\$270,063.26

Income and Expense Account for Year Ended December 31, 1927

(Exclusive of Reserve Account Income)

EXPENSE		INCOME	
Magazine	\$46,902.42	Membership Dues (less \$3,533.33, transferred to Endowment Fund)	\$64,442.51
General Administration	26,288.28	Miscellaneous Magazine sales	1,178.96
Membership Solicitation	12,820.38	Advertising (Net)	13,102.66
Forester's Office	7,495.08	Interest, exclusive of portion necessary to maintain Life and Patron Memberships	7,275.87
Educational Publicity	6,191.89	Bequests and Donations	459.00
Endowment Fund Expenses	2,327.15	Forester's Office	8,971.97
Operating Surplus for the Year	6,124.98	Special Projects	10,000.00
Additions to Endowment (Net)	181,281.28	Endowment Fund	183,608.43
		Miscellaneous	392.06
	\$289,431.46		\$289,431.46



Sapling Sam's Scrapbook

INSIDE INFORMATION

Joseph N. Le Conte, professor of engineering mechanics, University of California, and mountaineer by avocation, is the villain in this one from *The Oakland Tribune* and it reaches us in the *California Forest Service News Letter*:

On a recent camping trip in the Yosemite region, a bear raided Professor Le Conte's supplies with a regularity that became annoying even to a lover of the great outdoors and all that. The bear, having been declared a private pet of the government, made himself very much at home in the camp. Under government regulations, Professor Le Conte was entitled to one slap on the bear's wrist, but who wants to do that? In the old days when a man felt really tough he started the riot with a slug of whiskey and gunpowder, but in these gentler times the best Professor Le Conte could think of was raw meat well mixed with cayenne pepper. Now, what could be nicer for a university professor's evening meal than a chunk of beef with the contents of a can of red pepper emptied in a hole carefully cut in the meat? After preparing this snappy dish, Professor Le Conte wandered away from camp to work up an appetite. He looked back and, to his utter surprise, saw the bear swallow the meat with one gulp. For a fraction of a second the bear meditated on the errors of his life—swiftly all his thievery passed before his eyes, then he did a back flip and two handsprings and tried to turn himself inside out. He dashed through the brush, hit the highway on high and headed due north for the cooling icebergs of Alaska. He would have made it except for a Ford containing two gentlewomen and two gentlemen from Massachusetts. The car was also in the road headed the same way as the bear, but not fast enough. When the bear reached it he gave one leap, landed on the car's top and crashed through, falling lengthwise of the car and between the two gentlemen on the front

seat and the two gentlewomen on the rear seat. The four gentle persons shot out of the car, two on each side, faster than the bear fell into it; so fast, indeed, that the driver neglected to shut off his engine. When the motor vehicle came to a stop against a tree the bear was lying in it on his back, blowing red pepper over the surrounding acreage. History does not record what happened to the four gentle persons, nor what Professor Le Conte had for his evening meal.

If I Had Been

*I guess if I had been a tree,
Instead of being what I be,
I wouldn't stand in any park
Where men and maidens come to spark.
I'd probably have been at most
A sort of handy hitching-post,
And never scattered blossoms on
Some lady's path or rich man's lawn.*

*I guess if I had been a board,
I'd never got for my reward
A satin finish. I'd have been
A board to keep the warmth within
Or weather out. Or, like as not,
I'd come in handy in some spot
Where men store grain or men put coal
And need a board to plug a hole.*

*I guess if I'd been either one,
I guess more good I would have done
Than if I'd been a kind of king,
But not much use for anything.
Because, if I can have my way,
Can have my choice and have my say,
I'd rather cover up a hole
Than never help a single soul.*

—DOUGLAS MALLOCH in
American Lumberman

THIS COMPARISON IS ODOROUS

W. Lee Lewis, writing in the *Atlantic Monthly*, sheds a new light on St. Helena when he says:

"It is interesting to note that certain animals specialized in chemical warfare. The little bombardier beetle, with his tiny droplet of poison liquid hurled into the face of his pursuing enemy, was the original grenadier. The inkfish first used the principle of the smoke screen. The skunk is a social failure, but a first-class fighting man. He has a chemical equipment designed to make any dog too proud to fight. Have you ever, from a safe vantage point, noted him threading his way unattended and unafraid along some woodland crest? Then surely you must have thought of those noble lines applied to Napoleon in his incarceration: 'Grand, gloomy, and peculiar!'"

NOTES ON THE RANGE

A veteran talking to his great-grandson, a little lad of eight or nine years, remarked:

"Nearly a generation and a half ago my head was grazed by a bullet at the battle of Chickamauga."

The little fellow looked at the old man's head thoughtfully and said:

"There isn't much grazing there now, is there, grandpa?"

IN THE INTEREST OF BREVITY

The Forest Service announces that the name of the Ocala National Forest in Florida has been renamed Choctawhatchee.



SOUND KLAXON!

The *Burlington (Vermont) Free Press* startles the world with the statement that a Williams College man travels over Long Trail, a famous hikers' thoroughfare, at the lightning speed of "15 to 20 miles per hour."



From the Forest-clad Slopes of Maine

Direct to You

Fresh, fragrant spruces from the heart of the spruce country! That is where this beautiful and useful evergreen tree gets a better start than any other place in the world. That is where the hardest, most shapely, the deepest-green trees are now being brought up for your pleasure.

Here is a chance for you to become better acquainted with these splendid friends of man—Living Trees.

NOW you can raise your own trees. Their steadily increasing beauty—their strong, silent personalities—will repay you many times.

The delightful practice of tree growing is so easy by this plan of the Living Tree Guild. And you can be sure of success! For if you report that any of your Guild trees are not flourishing, they will be promptly replaced during the year without cost to you.

Such a guarantee is made possible in conjunction with the surprisingly low price because of the quality of these trees, and the spe-

cial method by which they are packed for shipping.

This method of encasing the trees in spagnum moss keeps the root systems moist. Thus, the post-man can deliver them to any address in the United States virtually as fresh as the day they were taken from their home soil.

In this way, the Living Tree Guild offers to everyone a way to have the finest trees; *four-year transplanted specimens*. With trees as old as that you gain several years of development over seedlings (they are six to twelve inches tall upon delivery and have magnificently large root systems).

With such spruce trees in your ground—the sun and rain will constantly make increasing profits and loveliness for you.

Every Tree GUARANTEED To Live

THIS stock of Guild Trees has been inspected by the Department of Agriculture and a certificate of inspection issued. With each shipment there are clear instructions for planting and suggestions for the many uses of these delightful spruce trees.

The low price of these trees con-

forms with the purpose of The Living Tree Guild to promote tree growing among a large number of individuals. Thus, to teach the joy and value of trees by *practice* and not by theory. Won't you make this modest investment? It will bring you much pleasure and profit.

TWELVE BEAUTIFUL NORWAY SPRUCES only \$**3.95** for all

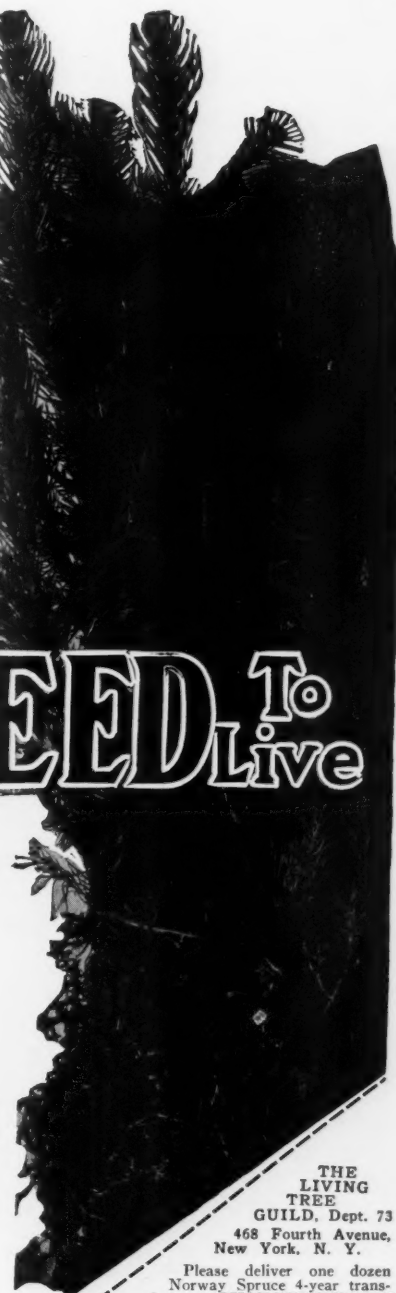
These trees will increase in value rapidly. Every year counts. Start your trees in your own ground without delay. You will never regret doing so. Later they can be transplanted if you move—but start now.

THE LIVING TREE GUILD

National Headquarters for Guaranteed Living Trees
468 Fourth Avenue New York, N. Y.

Ask for our catalog "Plant your own trees and save 90%."

The Secret is in the Roots



THE LIVING TREE GUILD, Dept. 73
468 Fourth Avenue, New York, N. Y.

Please deliver one dozen Norway Spruce 4-year transplants. **GUARANTEED.** If \$3.95 is not enclosed herewith you may send C. O. D. (No extra charge for packing and delivery.) Please Print Name Distinctly

Name

Address

City State

() Check here if you want TWO DOZEN for \$7.50 delivered!

Mention AMERICAN FORESTS AND FOREST LIFE—It Helps



National Forest Reservation Commission Approves Ten-Year Plan

The ten-year program of National Forest policy, substantially as expressed in the McNary-Woodruff bill and urged for three years by The American Forestry Association, was adopted as a definite policy by the National Forest Reservation Commission on February 18, subject, of course, to appropriations by Congress. Under this plan, ultimate purchases by the Federal Government would include 4,000,000 acres of land within the National Forests already established, primarily for the protection of navigable streams and within which the government has now completed the purchase of about 3,000,000 acres in the White Mountains of New Hampshire and the Appalachian Range.

A second feature is a commitment to a future purchase of 400,000 acres in the lower peninsula of Michigan and 700,000 acres within the Superior unit of northern Minnesota. The third feature would include purchase of 2,000,000 acres in additional forests to be created for the protection of navigable streams and the reduction of floods. The fourth feature is a contemplated purchase of 2,500,000 acres within new forests to be created for the purpose of promoting timber production through research and demonstration.

Summarized, the program calls for 2,500,000 acres in the northern Lake States, 2,500,000 acres in the southern pine region, and 4,500,000 acres in the mountainous regions of the eastern United States. New purchase units were authorized to be established in the upper peninsula of Michigan, two in the coastal section of South Carolina, and three in middlewestern Louisiana.

The commission approved the purchase of 19,980 acres in the land of the Superior Na-

tional Forest in Minnesota and 3,600 acres within the Tawas unit in Michigan. The average price of the land approved for purchase is \$1.62 an acre. One purchase of 23 acres in Tucker County, West Virginia, adjacent to the Monongahela National Forest, will be used as a nursery site for growing young trees to reforest 120,000 acres of untimbered land in the eastern National Forests.

Ovid Butler Heads Society of American Foresters

Ovid M. Butler, Executive Secretary of The American Forestry Association, and Editor of *AMERICAN FORESTS AND FOREST LIFE*, has been named President of the Society of American Foresters, following nomination by the Executive Council, and ratification by regional councils of the Society. C. S. Chapman, of the Weyerhaeuser Timber Company, Tacoma, Washington, succeeds Mr. Butler as vice-president.

This special action of the Executive Council of the Society resulted when Richard T. Fisher, Director of Harvard, declined to serve following his election by ballot, at San Francisco, early in January.

After graduating from Butler College, at Indianapolis, Indiana, in 1902, with a degree of A. B., Mr. Butler devoted three years to newspaper work in that city. In 1905 he entered the Yale Forest School, from which he graduated in 1907 with the degree of Master of Forestry. The same year he entered the United States Forest Service, and served continuously until 1922, when he became forester for The American Forestry Association.

He was named Executive Secretary of The American Forestry Association in 1923, and in the same year became Editor of *AMERICAN FORESTS AND FOREST LIFE*, the official magazine of the Association.

Senate Passes McNary-Woodruff Bill

On February 6, the Senate passed the McNary-Woodruff Bill, S. 1181, with a committee amendment rearranging the amounts available for the different years for purchasing National Forests, but retaining the ten-year program with a total of \$40,000,000. Senator Overman proposed a further amendment limiting the amount which may be expended in any state for purposes other than watershed protection or flood control to \$1,000,000. This was also adopted. Friends of the measure are satisfied with the bill as amended and look for early action by the House.

The Bill as the Senate passed it reads as follows:

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That there is hereby authorized to be appropriated, out of any money in the United States Treasury not otherwise appropriated, to be expended under the provisions of section 7 of the Act of March 1, 1911 (Thirty-sixth Statutes, page 961), as amended by the Acts of March 4, 1913 (Thirty-seventh Statutes, page 828), June 30, 1914 (Thirty-eighth Statutes, page 441), and the Act of June 7, 1924 (Public 270), available upon the passage and approval of this bill, \$1,000,000; available July 1, 1928, \$2,000,000; available July 1, 1929, \$3,000,000; available July 1, 1930, \$4,000,000; available July 1, 1931, \$4,000,000; available July 1, 1932, \$5,000,000; available July 1, 1933, \$5,000,000; available July 1, 1934, \$5,000,000; available July 1, 1935, \$5,000,000; available July 1, 1936, \$6,000,000; in all for this period, \$40,000,000, to be available until expended. *Provided,* That, except for the protection of the headwaters of navigable streams or the control and reduction of floods therein, no land shall be purchased under the appropriations herein authorized in excess of 1,000,000 acres in any one State.

New York Forestry Association Holds Annual Meeting

The New York Forestry Association held its sixteenth annual meeting February 2 at Albany, New York. Outstanding among resolutions adopted were those favoring the McNary-Woodruff Bill and the McSweeney bill now before Congress, and the program for acquiring and planting the 4,000,000 idle acres of submarginal lands in New York.

The following resolutions were adopted:

1. The McNary-Woodruff Bill now before the Federal Congress, looking toward the appropriation of \$40,000,000 to be used in land acquisition over a period of eight years, is heartily endorsed.

2. Continued and permanent success in the production of successive crops of forest trees rests on a body of knowledge that can only be obtained through exact, scientific investigation. In the belief that such research is needed in every branch of forestry, the New York State Forestry Association endorses the measure known as the McSweeney Bill, now pending before Congress, that proposes to make provision for forest research in a way similar to that now afforded research in agriculture.

3. The New York State Forestry Association records itself in favor of the principle of acquiring and planting the 4,000,000 idle acres of submarginal lands in the State of New York, as embodied in the Hewitt Bills now pending before the New York State Legislature; and in view of the need for planting stock adequately to reclaim these areas we strongly urge the increase of forest nursery facilities.

4. This Association favors increase in the compensation of firefighters from twenty-five cents to thirty-five cents per hour, and the pay of foremen of firefighting crews from forty cents to fifty cents per hour.

5. This Association expresses its thanks to the State Education Department for its co-operation in connection with the opening of its lecture rooms for our annual convention.

The following officers were elected for 1928: Hon. John D. Clarke, President; Colonel Robert M. Thompson, President Emeritus; Vice-Presidents, Thomas C. Luther, Hon. George L. Thompson, John B. Burnham, Hon. Ellis W. Bentley, Dr. Augustine S. Downing, Hon. Franklin D. Roosevelt, Alexander Macdonald, Hon. George L. Bockes, Dr. George G. Atwood, Hon. Ellwood M. Rabenold, Dr. Hugh P. Baker, F. Ambrose Clarke, John N. Carlisle, Hon. Clarence L. Fisher, George A. Lawyer, Matt H. Hoover, Charles G. Dumond, Harrington Mills, Mrs. C. C. Marshall and Mrs. Leon P. Janinet.

John D. Clarke was named chairman of the Executive Committee, which includes Dean Franklin Moon, Barrington Moore, Professor Ralph S. Hosmer, William G. Howard, George N. Ostrander and Albert B. Eastwood. J. R. Simmons was named secretary-forester; Sherman D. Fuller, treasurer, and William G. Howard and A. B. Racknagle, auditors.

Plant PACHYSANDRA~ it grows in the shade



PACHYSANDRA, the wonder plant of Japan, grows luxuriantly under trees, quickly covering unsightly, bare spots with a solid carpet of rich growth.

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The American Forestry Association

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Snapshots of European Forests

(Continued from page 171)

confirmed in their title by court action. There are today some twenty-two owners, all combined into a sort of association. In later years the government bought up fifty-one per cent of the stock and shares in the association's activities, as the state does in Finland and in some parts of Sweden. For this *Schifferschaftswald* there are a trained forester, seven forest rangers, seven road wardens, 110 loggers, and fifty roadmen, all employed throughout the year. The output of the forest is distributed equally to stock owners; partly in cash and partly in logs, the product being distributed equally per share. The distribution in kind forms fifty-nine per cent of the annual dividends. The region of the Black Forest varies in elevation from 2,300 feet to 3,300 feet. There is a fire danger at certain seasons, though the period of heaviest rainfall occurs in June and July when the tourist season is at its height. Up to 1776, there was much burning of the Scots pine areas by the local peasants with the idea of improving the pasturage. Here was "light-burning" back in 1770, still believed in by certain misguided American communities. This burning was wisely prohibited by orders of the Counts of Eberstein in 1776, and these decrees proved effective in stopping a short sighted practice. Would that we could stop ours by an order!

The present composition of the Black Forest is made up of the following tree species: spruce, forty-four per cent; silver fir, forty-two per cent; Scots pine, nine per cent; beech, five per cent. The management by the *Schifferschaft* has been very conservative, as sixty per cent of the stands are over one hundred years old, and it is interesting here to note that the state (or government) is now insisting that the stands of old stock or timber trees should be very materially reduced, which is opposed by the private owners. And here also it may be of interest to state that the Black Forest, said to be the largest and the best forest in Germany, remained practically untouched, throughout (and since) the World War, and even yet is hardly normally exploited, in spite of the severe financial straits which Germany has found herself in as regards her war obligations.

Bird Banding Association Meets

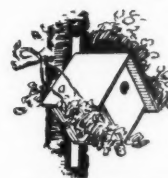
The annual meeting of the Northeastern Bird Banding Association was held recently in Boston, Massachusetts. Features of the session were addresses by Dr. T. Gilbert Pearson, President of the National Association of Audubon Societies; Ludlow Griscom, Research Curator of Zoology, Museum of Comparative Zoology; Oliver L. Austin, Jr., member of the Nuttall Ornithological Club, and Harrison F. Lewis, of Ontario, Canada.

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Detroit, Mich.

Landscaping the Spanish Type of Home

(Continued from page 137)

to such treelike proportions, New Zealand flax, poker plant (*tricomia*) and a special cactus garden. This same effect reduced to a minimum is indeed seen growing about small stucco bungalows in the city as a harmonious planting for emphasizing the Spanish note.

However, the hillside stucco home, as well as the country estate, has gradually awakened the Californian to the possibilities of native trees and shrubs for making harmonious environments. What used to be called "chaparral" and cleared away from a building site as underbrush is now as much prized as the native live oak, California maple, redwood or sugar pine (*Pinus lambertiana*). Such shrubs as the madrone, wild cherry, wild currant, wild coffee, wild lilac or "deer's brush" allspice, slippery elm, greasewood, giant buckeye, tree anemone, mountain mahogany, silk tassel tree, California holly or "Christmas berry," tree lupine (reaching a height of eight feet), if not already growing, are now frequently planted. Popular for such use, too, are such native trees as the wild walnut (*Juglans californica*), the tanbark oak, sequoias or "Big Trees," cottonwoods and the live oak (*Quercus agrifolia*) already mentioned. To Theodore Paine of Los Angeles much credit is due for pioneering with native trees, and he has planted a beautiful garden of his own entirely with "natives," from trees down to flowers. Whether the soil be sandy or dobe—the location affected by sea or desert—the above list is a comprehensive one from which to select adaptable trees and shrubs for the Spanish type of home.

For wealth of color, however, the landscape architect also draws upon imported trees and shrubs. From Mexico to China, come many that relieve the austerity of stucco architecture in our own Southwest. The maiden-hair fern tree from China, with its dainty dark green foliage, silhouettes against stucco as strikingly as the slender Italian cypresses, so popularly used in groups. As much stucco is tinted pink, green, tan, gray and buff, trees with color are often a cheerful emphasis. Thus the red-blossomed eucalyptus (*E. ficifolia*) sets off gray admirably. But a shrub like the rose-colored oleander from the Mediterranean, or the golden Spanish bloom (*Sparticum junceum*), which grows up to fifteen feet, may be another choice. In the spring nothing is lovelier than the golden acacia, known as "Baileyana," a tree considerably showier than the black acacias planted as street trees. Then the jacaranda, or trumpet-tree, which hails from Brazil, with its great cluster of lavender flowers, is another favorite. Among other flowering shrubs used as fillers are the Japanese lilac (*Buddleia*), Japanese holly (*ilex*), certain

cotoneasters, lion's tail, the fragrant pittosporum, Japanese flowering peach, Scotch heather and the Australian veronica, which may be seen in all its colors in Golden Gate Park in San Francisco. For foliage exclusively, the copiosma, or varnish plant, and the golden privet (beloved of the California-Japanese garden) are exceedingly popular for simple formal effects about stucco—softening it with little expense and trouble—except for trimming when they grow over the windows and up to a bungalow roof.

Fruit trees, for combining the decorative and practical, are used too. The lemon, orange, grapefruit and banana—seldom fruitful except in thermal zones—English walnut, peach and Paraguay guava (*feijoa*) are thus planted. Olive trees are most seen on country places.

And of course no "Spanish garden" quite has atmosphere without a palm. The older favorites were the fan and the date palm. But today the graceful "travelers' palm" (*Cocos plumosa*), which takes less space in parkways or corners, is chosen as often as the compact, little Japanese camphor tree to lend the last note of distinction to the landscape built around the Spanish type of home.

Marked Activity in Timber Cruising in New England

Marked activity in timber-cruising in the New England states is reported by James W. Sewall, consulting forester, of Old Town, Maine. In 1927, Mr. Sewall's organization cruised nearly 2,000,000 acres of timber in Maine, New York, Massachusetts, Minnesota and Quebec.

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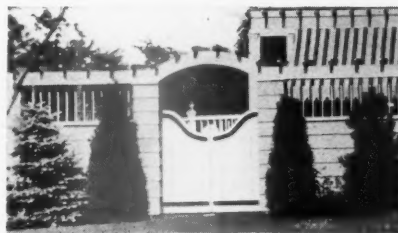
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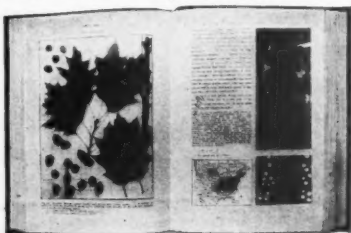
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Forest People

(Continued from page 167)

originated a process of planting which he calls "staking." A root is lowered to the muck through an iron pipe and tamped.

To dig the stock from the lake bottom, a staging is suspended between two boats several feet under water. From this the heavy root masses, some of them weighing a ton, are loosened by a long-handled, two-tined fork, and are drawn to shore by means of a windlass on the bank.

Likewise, after losing innumerable clippers during the process, Mr. Bauer has devised a cutting knife with a cork handle which, when dropped in the water, bobs to the surface and is readily salvaged. The knife is fitted with a blade from a hacksaw, by means of which the tough stems are more easily severed than by an ordinary blade. To bring the lilies to shore fresh and without bruising the delicate petals, the boats are equipped with tanks topped with frames of coarse chicken wire.

When the boats with their lovely cargoes reach the dock, the frames are lifted without handling the blooms, and are lowered to large troughs through which water is continually running. The dock in turn is covered with canvas which, during the heat of the day, is sprayed automatically by a specially contrived sprinkling system, thus keeping the temperature and humidity at the degree required to preserve the freshness of the lilies.

The cutting is done in the middle of the day when the buds are fully opened. About four o'clock in the afternoon they are closed again. Then they are ready for sorting and "bunching"—a baker's dozen to a bunch, for the Bauers believe in good measure. These are tied with pliable marsh grass and packed in damp bracken in light containers. The next morning at dawn they are taken by truck to their destinations in the city.

How to spray the extended areas of lily pads for green aphids—the one pest that attacks Nymphaeas in the west—was a serious problem until Mr. Bauer devised a "fumigator," a contrivance consisting of a light framework riding on four small, flat-bottomed scows, over which a canvas is spread. When this is towed to the lily beds, the canvas stretched to its fullest capacity, and a powerful punk lighted beneath it, a considerable surface may be treated at one time.

Also, the rampant growth of wild plant life in the lake called for an "aquatic lawnmower," which is the latest and perhaps the cleverest of all of Mr. Bauer's inventions. It is operated by the engine from an old automobile, and is composed of a sickle bar mounted on a scow in such a way that it may be raised and lowered at will.

Thus has a parcel of land, a shallow lake, and a little foresight and ingenuity been turned into one of the most fascinating enterprises in the world.

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The Tree Care Service Bureau is interested in simplified routine work in tree care: pruning, root feeding, spraying, cleaning out and filling rotting holes with materials that particular cavities will carry permanently—and frequently cover with new growth. Ask for a list of reliable Tree Specialists in your locality and a copy of the Government Bulletin on the "Care of Trees" (at cost, four two-cent stamps) and our suggestions. Address

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New Forests for Northern New York

(Continued from page 142)

great stretch of idle acreage, barren and bleak on that dark autumn day, and yet holding out the opportunity for public and private reforestation. Somehow, on the darkest day there is nothing bleak about a plantation of evergreens.

"What are the chances," I asked of Mr. Lawyer, "for others beside a well-financed corporation to go into reforestation in northern New York?"

"Perhaps that is best answered by telling you what some folks are doing," he said, "and by figuring out what it costs. Thomas Luther, of Mechanicsville, called the champion tree planter, has already planted 7,000 acres and is adding about 1,000 acres annually. He believes reforestation is a safer investment than the general run of securities, and besides, he says he knows more about trees than he does about bonds. Figure it out if you want to on the savings bank plan—ten dollars at four per cent, compounded semi-annually amounts to only \$48.75 in forty years. And ten dollars will buy and plant to trees a New York acre capable of returning \$300 in lumber in forty-five years.

"The city of Glens Falls," continued Mr. Lawyer, "has planted 2,000 acres of its watershed since 1910. The Carthage plantings, which started about the same time, now cover about 800 acres, and the St. Regis Paper Company has put out 5,000,000 trees on about 5,000 acres with good success."

I had begun to wonder what the counties were doing to put idle land to work, and I learned as we rode along that Essex County, in the northeastern section of the state, has authorized a ten-year planting program on county lands, to require \$5,000 a year. This means planting several hundred acres a year; that Oswego County, over on Lake Ontario, had, through its board of supervisors, appropriated \$2,500 for fall planting in 1928, and that other county boards were considering reforestation.

Tucked away under the designation "Section 33-A" in Public Lands Law of the State of New York is a provision which will make a forest out of many a piece of idle land. It provides that "the commissioners may, from time to time, transfer and convey to a city, incorporated village, town or county, in consideration of one dollar to be paid to the State of New York, a part or all of any parcel or parcels of unappropriated state lands upon certification that such parcel or parcels are useful for local park, recreation, playground, reforestation, street or highway purposes, and that they will be properly improved and maintained for one or more of such purposes, and provided that this disposition of such parcel or parcels is not otherwise prohibited." Already two or three such parcels (lands

which have been bid in by the state for non-payment of certain loans) have been taken over by counties for reforestation.

The New York Development Association, I learned from Mr. Lawyer, has in its broad platform of improving the conditions of this region, the fundamental plank of sound natural resource management. Using the forest soil to grow forests is one of the most logical follow-ups.

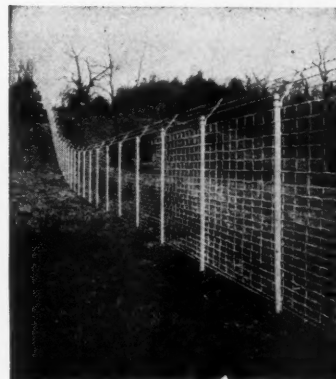
Knowing of Mr. Lawyer's former connection as Chief Game Warden of the Bureau of Biological Survey, I asked him where wild life came into the picture. "Planted forests of evergreens," I reminded him, "aren't such good hunting grounds."

"Don't I know it?" he replied, "and that's just why we are establishing a nursery at St. Regis Falls, through the courtesy of the St. Regis Paper Company, to raise berry-bearing shrubs and aquatic plants to distribute to planters. There will be a fine mixture of this sort of vegetation in our billion trees which you will see planted in the next fifteen years. The game and the fish are going to have something to feed on."

Since this interview, State Senator Charles J. Hewitt has introduced a bill by which a twenty-year reforestation program would be adopted for the entire state of New York, financed by a \$100,000,000 bond issue. A hearing held on January 18 developed almost universal support, only two groups testifying against it.

But New York is alive to the opportunity of reforestation. She may even see the wisdom of practicing conservative cutting in the Adirondacks some day. This must come as the good faith and business genius of soundly organized bodies like the New York Development Association take a sincere hand in working out a real state forest policy.

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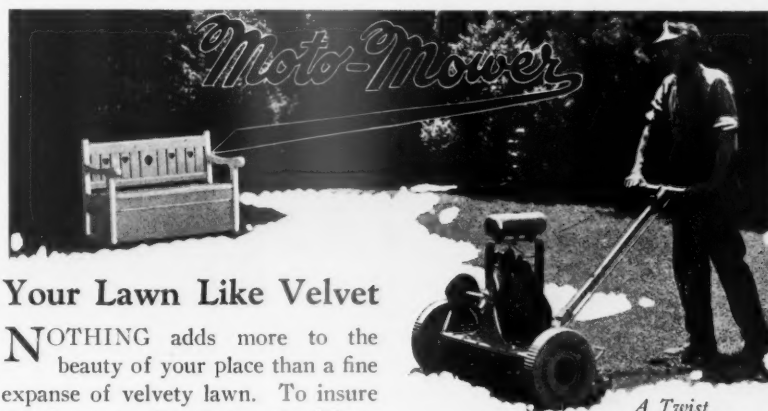
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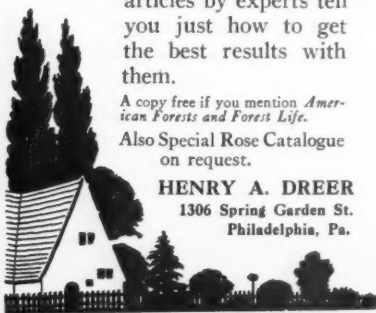
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Ask the Forester ?

Each Month Forestry Questions Submitted to the Association Will be Answered in This Column. If an Immediate Reply is Desired a Self-Addressed, Stamped Envelope Must Accompany Letter.

QUESTION: What is the annual per capita consumption of wood products in the principal wood-using countries in the world?—R. C. J., California.

ANSWER: Finland is the heaviest consumer, using annually 299 cubic feet per capita. Figures are for 1925, the last year for which accurate figures are available. Canada comes second with 285 cubic feet. The United States is third with 288 cubic feet. Chile is fourth with 177.7 cubic feet. It must be understood that these figures include all types of wood consumption, and if a converting factor were applied to them for the purpose of determining the equivalent of board feet, each figure should be multiplied by five and one-half.

QUESTION: What causes the bird's-eye effect in maple wood?—E. A., Virginia.

ANSWER: There are numerous theories, some of which are quite fantastic, such as woodpecker injury, transformation of sap into sugar, or markings caused by special sap channels developed when the tree is tapped. The most likely explanation is that bird's-eye is produced by adventitious or sporadic buds, which distort the wood in their vicinity. These buds start near the center of the tree when it is small, but never succeed in forcing their way out. They remain just beneath the bark during most of the whole of the tree's life. The pin-like core resembling a fine thread connects the bird's eye with the tree's pith. This thread is the pith of the embryonic branch formed by the bud which never breaks through the bark. When the wood is sawed tangentially, small dark brown points or dots show the centers of the buds or the pith lines connecting them with the tree's center. This information is borrowed from the Pennsylvania Department of Forests and Waters.

QUESTION: What spray is best for a gall which is appearing on blue spruce?—H. B. Company, New York.

ANSWER: According to the Bureau of Entomology, the spruce twig gall louse sometimes becomes injurious. The best time for successfully combating the insect is thoroughly spraying in the spring just before the middle of April with a nicotine sulphate soap solution or miscible oil solution. The miscible oil or lubricating oil emulsion should be diluted according to the directions of the manufacturer, using the dormant strength recommended, and the nicotine sulphate solution about one and one-half teaspoonfuls of nicotine sulphate to the gallon of water in which six ounces of soap have been dissolved.

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Sequoyah

(Continued from page 140)

illusioned Cherokees were driven at the point of bayonets to a hostile country beyond the Mississippi. Broken and discouraged, the Cherokees were forced to fight the Osage Indians to hold their new home. The Arkansas tribe, too, resented their coming, and war broke out among them. This sure method of extinction almost obliterated them as a tribe, until Sequoyah, now in his eighty-second year, stepped into the breach and effected a reunion of the Cherokee tribes as one nation. This put an end to the fratricidal turmoil, but not before great toll had been exacted among the warring red skins.

Ordinarily, a man's work is considered about finished when he attains the venerableness of eighty-two, but it only served to imbue the indomitable Sequoyah with a wanderlust that led him far afield among the Indians of still other tribes, all of whom he sought to enlighten through alphabetical channels. His desire to bring words to his groping kinsmen took him adrift among far western tribes. His fame had preceded him and everywhere he was received with deep respect and veneration. Nor did they resent his coming, for was he not one of their own race, and was not his skin as ruddy as theirs?

And so this great crusader of primal learning went his faltering way in the dusk of life—always westward with the setting sun—through mountain passes that would have discouraged and turned back the bravest heart of youth. He kept on until he crossed the Colorado Desert, and, after untold hardship, entered the Mexican Sierras—always alone. Here he searched pathetically for lost kinsmen of mythical lore, the band of Cherokees his forefathers had spoken of as lost somewhere long ago in northern Mexico.

At last even strength forsook his trembling limbs, and one starry night Sequoyah laid his weary head beside his lonely campfire for the last time.

Somewhere in the State of Tamaulipas, not far from the Rio Grande, hungry creatures of the wilderness found him before dawn, and only his bones were left for burial in the shifting, wind-blown sands.

His alphabet, too, is destined to oblivion with the passing of the once-powerful Cherokee race. Only his name lives forever in all honor, for, as far as science and record can determine, the greatest and most noble of all trees, the Sequoia, is derived from the name of the lone Cherokee Indian.

(In the April issue Miss Hastings will tell of the controversy between American and British botanists over the naming of the big trees in "Naming the Sequoia."—EDITOR.)



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<i>P. densiflora</i> (Japanese Red Pine)				8 to 12 in. (XX)...		35.00	285.00
18 to 24 in. (X)...		15.00	80.00	THUJA (Arborvitae)			
<i>P. mughus</i> (Mugho Pine)				<i>occidentalis</i> (White Cedar)			
8 to 10 in. (XXX) ..		50.00	400.00	6 to 8 in. (X).....		8.00	70.00
<i>P. resinosa</i> (Norway Red Pine)				10 to 12 in. (XX) ..		20.00	170.00
8 to 12 in. (X)....		10.00	70.00	TSUGA <i>canadensis</i>			
<i>P. sylvestris</i> (Scotch Pine)				(Amer. Hemlock)			
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From Fire to Snowslides

(Continued from page 155)

The heavy rain and the freezing and thawing at that elevation had caused a great section of the cliff to break away, and perhaps some tremor of the earth had sent it crashing downward. After falling several hundred feet this rock had struck the top of a rock slide and a bank of deep snow. The impact of tons of rock striking the mass of snow and loose rocks caused the whole mass to start down the mountain side, and as there was only a shallow layer of surface rock, it can readily be pictured what happened in the next few minutes. Tons upon tons of rock were soon sliding down the steep incline, pushing everything that was movable before it and taking the path of least resistance, which happened to be the bed of a small stream.

This gigantic mass of rock and debris crashed down the channel of the little stream and finally swept into the heavy stand of small hemlock and spruce lower down on the slope. This timber was pushed aside like a feather and the weight of the whole mass descended on the larger trees near the shoreline, crushing them as if they were match sticks in the hands of a giant. Big trees and little trees were ground into small fragments and shredded as if in an enormous pulp mill. Finally, with a great victorious roar, the immense mass of timber and rock plunged into the sea, leaving a devastated path through the stand of fine pulp timber.

In a few years this great white streak on the mountain side will resemble many other great scars that mar the forested mountains in Alaska. The rains will wash down the little dirt left on the area and the winds will scatter the huckleberry seeds, which will sprout and grow. Eventually the streak will be covered with a dense growth of these bushes and devil's club patches, and perhaps in centuries to come enough soil and humus will accumulate to furnish a place for the big trees to come back again.

But it is evident that a landslide does far more damage in an area of this type than a forest fire. After a burn the trees can come back in a decade or so, but in the case of the landslide where both the trees and the soil are wiped out, it may take centuries to form enough soil and humus to permit a tree to live.

Fir Experiments in Arizona

The Forest Experimental Station at Flagstaff, Arizona, reports very satisfactory growth on a hundred-acre tract planted ten years ago. Experiments are now under way with Douglas fir and yellow pine and the station has six sample plots of three to five acres each under observation. The study will cover a period of ten years.



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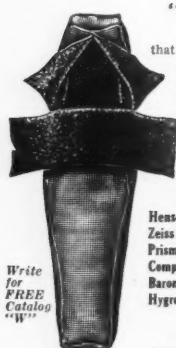
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Leavitt Hits Flood Program

(Continued from page 150)

I think it is fair for Congress to expect that when a report is made upon which the opinion of Congress may be formed and upon which the opinion of the Nation may be formed, it should contain only entire facts.

A study was made during the last year by the United States Forest Service in co-operation with the foresters of the various States in the Mississippi drainage, comprising about one hundred men trained in that kind of work. There were brought in certain recommendations as to what might be done, not to solve the problem of the Mississippi floods—and let me pause at this point and emphasize that again—no forester in official position or out has ever claimed that forestry would or could solve the problem of the Mississippi flood. No such claim has ever been made by anyone, but any informed forester knows, and many who are not foresters by profession know, from their own observation that a comprehensive reforestation of lands that are more suitable for the raising of forests, particularly on steep areas, will add materially to the control of flood waters in any drainage basin. The Chief Forester himself, Colonel Greeley, starts the statement he has made in connection with forests and floods, which was printed just this month, with these words:

"Now that the Mississippi floods have awakened us to the need for the most complete insurance possible against the recurrence of such catastrophes, it is essential that the true rôle of forests in flood control be recognized. Nothing will be gained by exaggerating the importance of that rôle. On the other hand, unless forests are permitted to play their part, much will be lost."

And Colonel Greeley closes his very comprehensive statement with these other words, that I wish to quote:

"In order to get the maximum benefits of forest cover in the Mississippi Basin it is essential that public ownership of forests, especially in the mountains and swamps, be greatly extended; that cooperation in forest fire protection between the Federal Government, the State, and private owners be increased; and that the Government and States give more assistance to farmers and timberland owners in forest planting and better forest management. Engineering works are a primary essential in flood control, but vigorous, well-kept forests will supplement

and protect them. The two methods of control should be developed together, a river being treated as a unit from source to mouth. The prudent use of forest land, like the prudent use of farm and grazing land, pays its own way, and the gain to flood control is a by-product without cost."

That is the position of the foresters, and words of other meaning should not be put into their mouths.

The forestry report placed in the hands of General Jadwin stated eight ways whereby forest practice and control of public lands might add to the solution of this problem, and among those eight ways there are seven that could now be handled under laws which exist.

Seven of these in their order of importance are adequate protection against fire of the forest lands within the Mississippi River watershed; increased activities in the planting land chiefly valuable for growing timber; proper management of farm woodland; extension of public forests to the extent of about 8,000,000 acres within the watersheds; continued protection of national forests and the reservation of adjoining forest acres of unreserved public domain; research to discover methods of preventing serious erosion in the Bad Lands and the Breaks; checking present destructive run-offs and erosion from public grazing lands by regulating their use. There is no law which would allow the latter procedure, but all the others are covered as possibilities by existing law and require only more adequate appropriations.

But the General, listing only the item to increase forest areas by 8,000,000 acres within the watersheds by extension of public forests, says on page 19 of his report:

"Studies of the reservoir board have shown that to reduce the flood stage of the Mississippi by one foot it is necessary to store from 7,000,000 to 11,000,000 acre-feet of water. The absorption and retention of one-half of an inch of rainfall on the 8,000,000 acres of land covered in the recommendation of the forestry report would therefore reduce flood stages by but one-half an inch."

General Jadwin has intimated that the forestry report comprises only the proposal to add 8,000,000 acres of public forest, which would reduce the flood crest only one-half inch, when the fact is that the forestry report made eight proposals, and these eight proposals together cover not 8,000,000 acres of land but twenty times 8,000,000 acres of land. Taking the figures of General Jadwin himself and applying them to this entire area it would have reduced the crest of the flood 10 inches instead of half an inch.

Also, in this report they have placed the forestry report as a suggested alternative. It has never been suggested as an alternative. It has been suggested as a supplement to the engineering work, which the forester has always said is the prime necessity to meet the present situation, with forestry

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added to help keep the disaster from recurring.

The plea I am making at this time is that instead of our allowing a report of this kind to turn the attention of the Nation aside from the place which forestry should take in meeting this great problem of flood control, members should have in mind that it has a definite and important place. At the headwaters of a stream it will help to stop erosion, and in the absorption of the rainfall and the snow, it will play an important part, though no one claims that it will solve the entire problem.

Let us keep in mind the statement made in the *Saturday Evening Post* back last year when the flood took place:

"Perhaps the only beneficial effect traceable to the recent floods is the nation-wide publicity they have given to the needs for extensive reforestation in most of the thirty States drained by the Mississippi River. It is to be hoped that each of them will give the matter thoughtful consideration and take such action as will serve both ends—a better retention of local rainfalls and the up-building of a more adequate timber supply."

Blister Rust in Oregon

Discovery of blister rust near Eagle Creek, in the Mount Hood National Forest, Oregon, has been reported by the United States Forest Service. It is the first time that the rust has been found south of the Puget Sound region in white pine stands.

It is believed by officers of Blister Rust Control that the spores blew in from infected areas in the north, the relatively moist conditions of 1926 being conducive to the spread of the disease. While the Mount Hood region is the only known infected area it is thought likely that the rust may spread into western pine in the Cascade Mountains and to the sugar pine stands in California.

Park, Forest and Roadside Conference in Connecticut

Foresters, tree wardens and members of the Mattatuck Historical Society met at Waterbury, Connecticut, early in February to discuss park, forest and roadside improvements. The session was held under the auspices of the Connecticut Forestry Association, the Connecticut Chamber of Commerce, and Naugatuck Valley Chambers of Commerce Association.

Problems of State Forests and Parks were discussed by Colonel T. S. Woolsey, Jr., who made an official inspection of the forests of New England during the recent floods; A. F. Hawes, State Forester of Connecticut; W. O. Filley, Commissioner, Connecticut State Park and Forest Commission; Major W. A. Welch, Chief Engineer, Palisades Interstate Park; and Francis P. Guilfoile, Mayor of Waterbury.

The need for roadside improvement was stressed by Luther M. Keith, of the Connecticut Highway Department.

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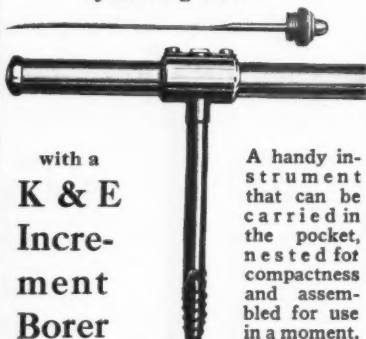
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Conference Spurs Forestry Onward

(Continued from page 159)

"The forest grower has a right to demand that a public that professes to be deeply concerned about future forests and about their production by him shall adjust taxation to the nature of the property. To make forest growing practicable, especially when the new forests are not associated in ownership with old forests, it is necessary that tax collection shall be deferred until there is income with which to pay them. . . .

"In conclusion, I want to express the appreciation of the lumber industry of the splendid work The American Forestry Association is doing for industrial forestry. It is a great constructive force for new forests. It concedes every one of the requests I have made of the public. It admirably reconciles in its program the aspirations of the forest lovers and the needs of the forest users and growers. It understands that industrial reforestation is based on wood utilization. It perceives at once the public interest in perpetuated forests, in its many and varied forms, and yet understands the intricate problems that confront the industrial reforester, upon whom the public must rely for future forests, in the main, unless it adopts public ownership. Its sanity and good temper have converted many an old-time scorner of forestry into an earnest disciple. It has given the timberman the public point of view and it has informed the public of the timberman's practical problems."

The importance of public forests was strongly emphasized by Mr. Dana as an essential part of an adequate forest policy for the nation. "The forest program," he said, "is too big, complex and acute to be solved by private owners alone. The entire public must do its share in meeting the situation, and the establishment of public forests constitutes one of the most effective means of doing this."

"The opening up of one forest region after another, as the lumber industry has crossed the continent from the Atlantic to the Pacific, has made possible the meeting of our wood requirements. As a result, many do not realize that this situation will be entirely changed with the exhaustion during the next few decades of the remaining supply of virgin timber on the Pacific Coast."

We shall then have to grow the bulk of our own timber or go without. The difficulty of doing this can perhaps be best appreciated by reminding ourselves that we are now using from four to five times as much wood as we grow and that we have some eighty-one million acres of cut and burnt-over forest land which is virtually a desert so far as the production of useful timber is concerned. Very little of our forest land is producing what it might under effective methods of forest management; yet in order to meet our own needs it will be necessary to raise the production on every acre of our forest land, including that which is now wholly or partially idle, to the level achieved by the more progressive European countries.

"The immensity of this task is emphasized by the fact that even crude forestry measures are now being practiced by private owners on only about five per cent of the total forest area in private ownership. While the area of conservatively managed lands will doubtless continue to increase steadily, and perhaps rapidly, it is perfectly clear that progress in this direction will not be fast enough to meet the urgent needs of the situation. Public forests will be of the utmost help in doing this, particularly on the poorer lands which are likely to be the last to receive attention from private owners. In many cases public ownership offers the only sure means of maintaining the productivity of forest lands and we have now reached the point in the utilization of our forest resources where the fate of every acre counts."

"The stabilizing effect of a large area of well-distributed public forests has an importance which it is difficult to overestimate. There is every reason to believe that public forests will continue to be handled so as to maintain a continuous supply of timber. This not only means that they can be counted on to contribute indefinitely a considerable share of our local and national wood requirements, but also that they have a beneficial stabilizing influence on the entire lumber industry. . . .

"Economically, socially, and historically, public forests are an essential part of any well-rounded national forestry policy. Timberland owners and the lumber industry under their sympathetic support and hearty cooperation may assure their successful management by extending their present area."

The remaining morning session was devoted to an address by Dr. W. W. Long, of Clemson College, South Carolina, who spoke on "The Role of Forests in the Greater South," and a paper by Dr. Hermann Von Schrenk, President of the Missouri Forestry Association, on "Missouri's Forest Program," read by Frederick Dunlap, State Forester of Missouri.

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No Forest Devastation!

The Saturday morning session was devoted to Forests and Industry, with M. E. Meacham, President of the St. Louis Hoo Hoo, presiding. H. M. Wilson, vice-president, Baldwin, Lewis, Pace Company, of Florida, presented a paper on "Perpetuating Our Naval Stores." In part, Mr. Wilson said: "Among the things most needed to perpetuate the naval stores industry, comes first, in my opinion, reforestation, with all that it means in the way of fire protection, education, and visible experimentation. This should be administered under the direction of foresters whose training should include at least a rudimentary knowledge of, and some familiarity with, the naval stores producing industries. I am frank to say that a reforestation proposition having only as its ultimate aim the future production of a crop of timber commercially profitable would have no appeal to me whatever from a strictly financial standpoint. I am very sure, however, that practical reforestation, coupled with conservative turpentine methods, can be made to pay a good return on the capital invested and also create and maintain a future supply of pulp wood, ties, poles, and sawmill timber.

"In connection with our reforestation and naval stores problem must be placed, first, the fire menace. I may say, though, that on account of the general topography of the naval stores pine area we do not have the destructive top fires so hard to combat in the mountainous sections. From the naval stores producer's standpoint this has been and, in fact, yet is, a real problem which he has been able to combat only with fire. For years he has been forced, on account of the inflammable nature of the residue of crude gum necessarily left on the tree, to hoe by hand labor each winter a space extending out about two and one-half feet entirely around each tree and then burning the woods himself in order to protect himself from accidental fires or those caused from carelessness or purposely set by cattle owners in order to provide a fresh spring pasture. This course is one of self-defense and cannot be remedied except with the cooperation of the entire community. To secure this cooperation is, in my opinion, the first step toward reforestation, and can be accomplished only through education and by widespread information, particularly in rural districts, of the impoverishing effects of annual woods fires.

"In this connection I want to sincerely thank The American Forestry Association on behalf of the naval stores industry, if I may, for the splendid appropriations made for work of this character to be carried on under their direction in at least three naval stores producing states, and to further say that I believe this is the rock foundation on which can be built a solid and lasting policy of reforestation and naval stores perpetuation."

E. E. Pershall, vice-president of the T. J. Moss Tie Company, of Missouri, spoke on "Keeping Up the Tie Supply." "Reforesta-

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tion in the cross-tie industry," declared Mr. Pershall, "is an economic problem resolving itself into finding a balanced equation of interest charges and taxes against stumpage values and annual increments of growth. The problem in our industry can most certainly be solved when these factors are in a state of substantial equality. There are lands aplenty that could be, and probably will be, utilized to grow timber when the stumpage values prompt the selfish urge for private gain to make this a profitable business. In some instances this is a profitable business now, in the purchases of cheap lands having an already healthy and relatively dense stand of young timber.

"These are the problems which we must decide daily in our business, and we must decide them with an eye to the possible profit or loss involved. For example, the one concern with which I am best acquainted owns more than 140,000 acres of land, some cut-over, some yet to cut, and some lands that will never be cut over again. On the Tennessee and Cumberland Rivers large areas of land were cut over for charcoal wood about the time of the Civil War, and the timber has now grown to a stand of seventy-five ties per acre on one tract of some 3,500 acres that can be referred to specifically. This is reforestation unpremeditated in the beginning, but of good results in the end. Other areas along these rivers are being subjected to fairly efficient methods of forestry that will yield a definite and assured annual crop of cross ties.

"These examples will be multiplied as the years go on and as stumpage values increase, but more particularly as the statements of profit or loss demonstrate that here is an increasingly large field for the profitable employment of capital and forestry experience. It is on this basis of sound economic structure that the growth of timber will play a more important part in our industry, having for its inception the financial rewards that naturally accrue to those of us who have the foresight to anticipate a demand for any commodity, together with the courage and capital necessary to provide an adequate supply."

John D. Rue, of the Champion Fibre Company, North Carolina, took as his subject, "The New Era of Paper Making in the South," and declared that the pulp and paper industry has already developed in the south to such proportions that it is having a marked effect upon the ownership and operation of forest properties.

"Paper mills are acquiring their own forests," declared Mr. Rue, "and are operating them by approved forestry methods. Especially is this true of kraft mills which consume, as pine wood, the major proportion of pulpwood used at the present time in the south. A similar practice is evident, however, in the case of mills using spruce and hemlock.

"Another significant effect which the industry is having on forestry is evidenced by the growth of the coordinated operation

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Reforestation Wanaque Reservoir

24 Commerce St., Newark, N. J.
February 2, 1928.

Sealed proposals will be received from 11:00 a. m. to 11:10 a. m., Eastern Standard Time, on March 8, 1928, by the North Jersey District Water Supply Commission, in its office, Room 1125, 24 Commerce Street, Newark, N. J., and publicly opened and read at the last named hour, for the performing of all necessary work required in the furnishing and planting of small trees at Wanaque Reservoir. The work will include the furnishing and planting of about 350,000 small trees, principally 3 and 4-year pine transplants with some spruce, hemlock, arborvitae and mountain ash.

A pamphlet containing the information for bidders, form for proposal, form of contract, specifications and drawings may be obtained at the office of the Commission.

All bids shall be made on the blank forms supplied by the Commission, which provide for a detailed statement as to the bidder's experience and resources as well as the unit prices for which he will execute the respective items of work.

Each proposal must be accompanied by an agreement in writing of a surety company qualified to do business in New Jersey, binding itself to indemnify the Commission against any losses due to the failure of the person or persons making this proposal to properly execute the contract in case it be awarded to him or them, and binding itself that if the contract be so awarded the said surety company will become surety for the faithful performance of the same in an amount equal to 50 per cent of the contract price.

All bids must be accompanied by a certified check for five hundred dollars (\$500), as a guarantee for the good faith of the bidder. Checks of unsuccessful bidders will be returned within 15 days, that of the successful bidder upon the execution of contract and bond.

The Commission reserves the right to reject all proposals, or any proposal which may be informal or the acceptance of which, in the judgment of the Commission for the reasons as suggested in information for bidders or for any other reason, would be detrimental to the interests of the municipalities for which the work is to be done.

By order of the North Jersey District Water Supply Commission of the State of New Jersey.

BERKELEY W. MOORE, JR.,
Chairman.
MORRIS R. SHERRER,
Consulting Engineer.

Attest:
EDMOND TYLER,
Secretary.
ARTHUR H. PRATT,
Chief Engineer.

of pulp and sawmills. In some cases, sawmill operators are establishing pulp and paper mills in connection with their sawmills as a means of providing a profitable outlet for the mill and logging wastes and for forest thinnings." This practice is outstandingly evident in the operation of pine properties.

"The time may come when the costs of producing paper will increase to the point where capital will be attracted to the perfection and development of certain mechanical processes and to the research necessary for the invention of others. Economic conditions do not seem favorable, however, for any early establishment of a newsprint industry in the south, even though such a development is to be desired from the standpoint of the utilization of the product of the southern forests."

Devere Dierks, of the Dierks Lumber Company, gave an interesting account of how his company is making its lumber operations permanent. Judge Edward A. White, vice-president of the Missouri Pacific Railroad, spoke on "The Railroads' Interest in Forestry."

Frederick Dunlap, State Forester of Missouri, presided during the afternoon session, which was devoted to public education in forest-fire prevention and timber growing. S. F. Horn, Editor of the *Southern Lumberman*, presented a paper on "Woods Burning as a Problem in Public Education."

"Woods burning in the South," declared Mr. Horn, "may be divided broadly into two general classes, namely, the accidental and the purposeful. Accidental woods fires usually start from either carelessness, lack of interest in preventing them, or because people do not know that burning hurts the woods. In truth, this third cause probably includes the first two, since carelessness and lack of interest in preventing fires is probably directly due to people's not knowing that burning hurts the woods. Education, therefore, is the first essential in making the public acquainted with fire damage in the woods."

"The stopping of fires which are deliberately set in the south involves a different form of education from that. There is merely a matter of correcting the carelessness of some thoughtless person. That this phase of the problem is particularly acute in the south is shown by the figures compiled showing the forest fires by causes and regions based on a ten-year average from 1916 to 1925. These figures show that of 9,440 incendiary fires in the United States, 5,156 occurred in the southwest alone. In this region it has become a firmly fixed habit to burn the woods every year for the purpose of supposedly improving the grazing conditions."

Following Mr. Horn, E. O. Siecke, State Forester of Texas; Page S. Bunker, State Forester of Alabama, and W. C. McCormick, Extension Forester of North Carolina,

spoke briefly on "Methods of Public Education for the State." Methods of public education for the timber owner were then discussed by Howard Andrews, President, Nashville Tie Company, and B. F. Smith, Industrial Lumber Company, Louisiana.

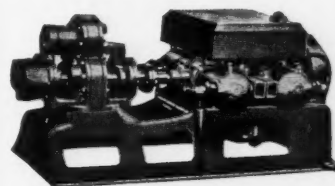
The last speaker was James M. Wait, Director of the Arkansas Traveling Educational Project, who gave an interesting demonstration and typical illustrated talk as given to the rural communities in Arkansas.

A banquet was given Friday evening at the Statler Hotel. Izaak Hedges, prominent St. Louis business man, acted as toastmaster. Among the speakers of the evening were Dr. H. A. Buehler, State Geologist of Missouri, and George Smith, Manager of the St. Louis Industrial Bureau.

One of the most interesting innovations of the joint meeting was the presentation of the "Forestry Cup," awarded by The American Forestry Association to the agency exhibiting the most effective educational material for the promotion of forestry. The cup was awarded the Western Forestry and Conservation Association, Portland, Oregon, for their poster "Forest Fires Make Idle Lands, Idle Industries, Idle Hands." The second award, a red ribbon, went to the Louisiana Department of Conservation. Ohio State Forestry Department, Illinois State Department of Conservation, and the Kentucky Forest Service received honorable mention.

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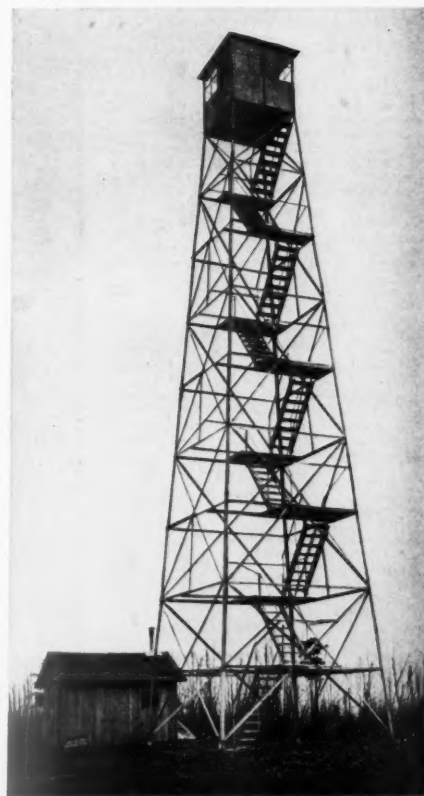


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LOCATION AND AMOUNT.—All the merchantable dead timber, standing or down, and all the live timber marked or designated for cutting on an area embracing about 67,400 acres in Township 15 S., Ranges 29, 30 and 31 E.; Township 16 S., Ranges 29, 30, 31 and 32 E., and Township 17 S., Ranges 29, 30 and 31 E., W. M., Silvies River watershed, Malheur National Forest, Oregon, estimated to be 770,000,000 feet b. m., more or less, of western yellow pine and 120,000,000 feet b. m., more or less, of Douglas fir, western larch, white fir, lodgepole pine and other species of timber, the cutting of other species than western yellow pine to be optional with the purchaser. The cutting of government timber at an average rate of 60,000,000 feet annually will be permitted.

STUMPAGE PRICES.—Lowest rates considered \$2.80 per M for western yellow pine, \$1.05 per M for Douglas fir and \$.55 per M for other species. Rates to be readjusted on a date approximately three years from beginning of cutting and at three-year intervals thereafter.

DEPOSIT.—\$25,000 must be deposited with each bid, to be applied on the purchase price, refunded, or retained as liquidated damages, according to conditions of sale.

CONDITIONS.—Each bidder must submit with his bid a statement of his financial resources, including the funds available for use on this project, and, before final award, the person or company submitting the most acceptable bid will be required to show that he has immediately available or will have available as needed sufficient funds to provide the improvements, equipment and working capital necessary to enable him to meet the requirements of the agreement. The manufacture of the timber in or near Burns, Oregon, will be required. The conditions are given in full in the prospectus and sample contract.

FINAL DATE FOR BIDS.—Sealed bids will be received by the District Forester, Portland, Oregon, up to and not later than 2:00 P. M., June 1, 1928, and will be opened immediately thereafter.

The right to reject any and all bids reserved.

Before bids are submitted full information concerning the character of timber, conditions of sale, deposits, and the submission of bids should be obtained from the District Forester, Portland, Oregon, or the Forest Supervisor, John Day, Oregon.

Forester's Position in Northern Pacific Land Grant Controversy Sustained

By Joint Resolution of March 3, 1927, Congress directed the Attorney General to advise the Northern Pacific land grant committee "as to what legal or legislative action should, in his judgment, be taken in the matter of the adjustment of the said Northern Pacific land grants."

This resolution followed the hearings held by the Joint Committee, at which some 5,500 pages of testimony were taken on the 22 points raised by the Forester in connection with the adjustment of the Northern Pacific land grants as made by the Interior Department. An indicated unsatisfied deficiency in the land grants threatened to pass into ownership of the Northern Pacific upwards of 3,000,000 acres of National Forest lands within the indemnity limits of the grants.

At the hearings before the Joint Committee the Forester maintained under his 22 points that if the proper deductions were made from the acreage of the land grants, and if the Northern Pacific were held to be accountable for its violation of the land grant provisions, it would not be entitled to any additional lands from the Government.

The Forester contended that the Northern Pacific already had received more than it was entitled to under the grants.

The Attorney General, in the memorandum transmitted to the Joint Committee on February 8, 1927, sustains every major point raised by the Forester. Of the 22 points offered by the Forester, the Attorney General agreed with 19 and disagreed, in part, on three minor points.

In one of the concluding paragraphs of the opinion transmitted by the Attorney General, in which is analyzed each one of the Forester's points or suggestions, it is said: "A consideration of the foregoing suggestions indicates that not only does no deficiency exist in the grants but that the company has already received approximately 5,000,000 acres of public land which it has not earned and is not entitled to, besides additional values."

The opinion concludes that the United States may revest in itself any of the granted lands remaining in the ownership of the company, and that Congress may declare the grants forfeited.

B. F. Smith Heads Southern Forestry Congress

The tenth Southern Forestry Congress at Louisville, Kentucky, went on record, among other things, as strongly urging consideration of forests as means of flood control, and strongly opposing the dismembering of the Ouachita National Forest in Arkansas to create a National Park.

B. F. Smith, of Elizabeth, Louisiana, was elected President; W. R. Hine, of New Orleans, Secretary, and Henry Hardtner, of Uruania, Louisiana, Chairman of the Executive Committee.

Western Forestry Meeting

With forest management featuring their program, the Western Forestry and Conservation Association held its annual meeting at Tacoma, Washington, February 20-22, inclusive. Many private, state, federal and British Columbia timber and protective agencies were represented.

The general session dealt chiefly with the approaching government study of forest taxation in the Pacific Northwest and the influence of public timber disposal on private forest management. Other subjects discussed included reforestation by lumbermen, insurance in logging camps, the forest insect and disease situation, slash hazard control and forest research work.

Forest Supervisor to Lecture in Eastern Schools

David N. Rogers, Supervisor of the Plumas National Forest, California, is lecturing the forest schools in eastern and midwestern universities. His subject deals with the administration and protection of the national forests and the opportunities afforded by the United States Forest Service for the employment of professional foresters.

Mr. Rogers will address the forestry students of the following universities: Pennsylvania State Forest School, Mount Alto, Pennsylvania; Pennsylvania State College, State College, Pennsylvania; Yale University School of Forestry, New Haven, Connecticut; University of New Hampshire, Durham, New Hampshire; University of Maine, Orono, Maine; New York State College of Forestry, Syracuse, New York; Cornell University, Ithaca, New York; University of Michigan, Ann Arbor, Michigan; Michigan State College, East Lansing, Michigan; Iowa State College, Ames, Iowa; University of Minnesota, St. Paul, Minnesota.

California Offers Technical and Research Assistantships

The Baker and the Bidwell Research Assistantships in Forestry for 1928 have been announced by the University of California, at Berkeley. These positions provide opportunity for graduate work in forestry and range management.

According to university officials, all applicants must have received a bachelor's degree from a school in which the requirements for graduation are not below those of the College of Agriculture of the University of California, and must have completed at least twenty units of forestry courses in a forestry school of good standing. Three years or more experience in a field closely allied with forestry may be substituted for the last condition. Only citizens of the United States are eligible.

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